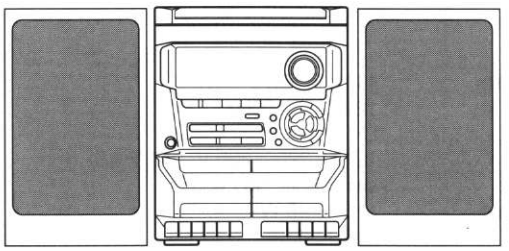
aiwa

aiwa SERVICE

NSX-A111
NSX-A115
NSX-S111
NSX-S119

SERVICE MANUAL



COMPACT DISC /
STEREO CASSETTE RECEIVER

- BASIC TAPE MECHANISM : TN–21ZFW–1815
- BASIC CD MECHANISM : 4ZG–1 Z3RNDSHJM,Z4RNDSHC
- TYPE : U,HA,LH

REVISION PUBLISHING

SYSTEM	SPEAKER	CD – CASSEIVER	REMOTE CONTROLLER
NSX–A111 (TYPE : U)	SX–NA112	CX – NA111	RC UNIT ZAS02
NSX–A115 (TYPE : U)	SX–NA115	CX – NA115	
NSX–S111 (TYPE : HA)	SX–NS112	CX – NS111	
NSX–S111 (TYPE : LH)			
NSX–S119 (TYPE : LH)		CX – NS119	

- This Service Manual is the "Revision Publishing" and replaces Simple Manual of NSX-A111/A115/S111<U,LH> (S/M Code No. 09-991-404-3T1), NSX-S111<HA> (S/M Code No. 09-991-404-3T2).
- If requiring information about the CD mechanism, see Service Manual of 4ZG-1 (S/M Code No. 09-992-325-4N2).

S/M Code No. 09–993–404–3R1

SPECIFICATIONS

<FM Tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)

<AM Tuner section>

Tuning range	530 kHz to 1710 kHz (10 kHz step) 531 kHz to 1602 kHz (9 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<Amplifier section>

Power output	111U: 10 W + 10 W (60 Hz – 20 kHz, THD less than 1%, 6 ohms) 15 W + 15 W (1 kHz,T.H.D. less than 10%, 6 ohms) 115U: 20 W + 20 W (60 Hz – 20 kHz, THD less than 1%, 6 ohms) 25 W + 25 W (1 kHz,T.H.D. less than 10%, 6 ohms) LH, HA : Rated : 13 W + 13 W (6 ohms, T.H.D. 1 %, 1 kHz) Reference: 15 W + 15W (6 ohms, T.H.D. 10 %, 1 kHz)
Total harmonic distortion	111U: 0.1 % (6 W, 1 kHz, 6 ohms, DIN AUDIO) 115U: 0.1 % (12 W, 1 kHz, 6 ohms, DIN AUDIO) LH, HA: 0.1 % (7.5W, 1 kHz, 6 ohms, DIN AUDIO)
Inputs	VIDEO/AUX : 500 mV
Outputs	SPEAKERS: accept speakers of 6 ohms or more PHONES (stereo jack): accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	50 Hz - 8000 Hz
Recording system	AC bias
Heads	Deck 1 : Recording/playback/erase head x 1 Deck 2 : Playback head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<Speaker system SX–NA112, SX–NA115, SX-NS112>

Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Woofer : 120 mm ($4^3/_4$ in.) cone type Tweeter : 20 mm ($^{13}/_{16}$ in.) ceramic type
Impedance	6 ohms
Output sound pressure level	86 dB/W/m
Dimensions (W x H x D)	220 x 324 x 235 mm ($8^3/_4$ x $12^7/_8$ x $10^3/_8$ in.)
Weight	2.0 kg (4 lbs 7 oz.)

<General>

Power requirements	111U, 115U : 120 V AC, 60Hz LH & HA: 120 V/ 220 – 230 V/ 240 V AC, switchable, 50 / 60 Hz
Power consumption	111U : 45 W 115H : 65W LH, HA : 50 W
Dimensions of main unit (W x H x D)	260 x 324 x 349.5 mm ($10^1/_4$ x $12^7/_8$ x $13^7/_8$ in.)
Weight of main unit	111U : 4.5 kg (9 lbs 15 oz.) 115U : 5.3 kg (11 lbs 11 oz.) LH, HA : 4.9 kg

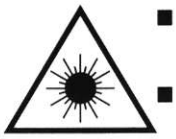
• Design and specifications are subject to change without notice.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saataa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

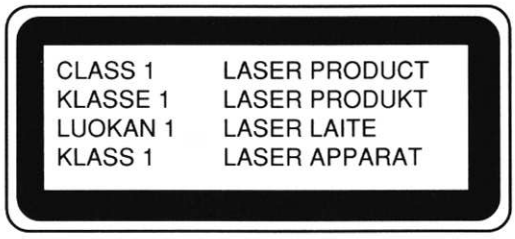
ATTENTION

L'utillisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

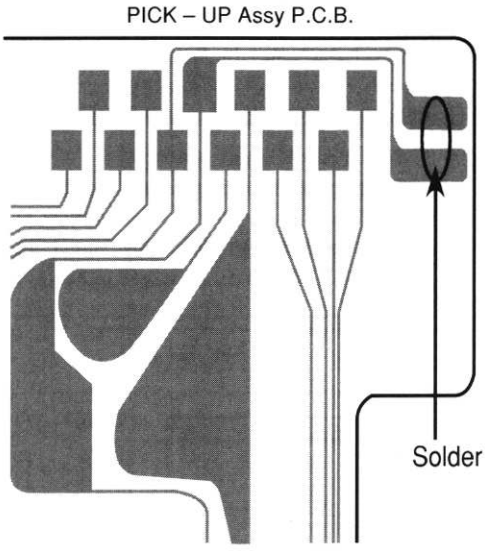


Precaution to replace Optical block

(KSS-213F) <Z3RNDSHJ>
(KSS-213IFAM) <Z4RNDSH>

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure to ground body and workbench, and ensure clothes do not touch the diode.

1) After the connection, remove solder shown in right figure.



NOTE ON BEFORE STARTING REPAIR

1. Forced discharge of electrolytic capacitor of power supply block

When repair is going to be attempted in the set that uses relay circuit in the power supply block, electric potential is kept charged across the electrolytic capacitors (C101, 102) even though AC power cord is removed. If repair is attempted in this condition, secondary defect can occur.
In order to prevent the secondary trouble, perform the following measures before starting repair work.

Discharge procedure

① Remove the AC power cord.
② Connect a discharging resistor at an end of lead wire that has clips at both ends. Connect the other end of the lead wire to metal chassis.
③ Contact the other end of the discharging resistor to the positive (+) side (+VH) of C101. (For two seconds)
④ Contact the same end of the discharging resistor as step ③ to the negative (-) side (-VH) of C102 in the same way. (For two seconds)
⑤ Check that voltage across C101 and C102 has decreased to 1 V or less using a multimeter or an oscilloscope.

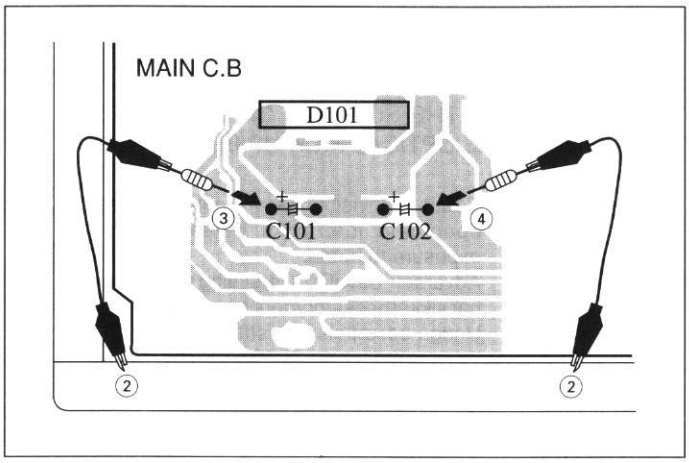


Fig-1

Select a discharging resistor referring to the following table.

Charging voltage (V) (C101, 102)	Discharging resistor (Ω)	Rated power (W)	Parts number
25-48	100	3	87-A00-247-090
49-140	220	5	87-A00-232-090

Note: The reference numbers (C101, C102) of the electrolytic capacitors can change depending on the models. Be sure to check the reference numbers of the charging capacitor on schematic diagram before starting the discharging work.

2. Check items before exchanging the MICROCOMPUTER

Be sure to check the following items before exchanging the MICROCOMPUTER. Exchange the MICROCOMPUTER after confirming that the MICROCOMPUTER is surely defective.

2-1. Regarding the HOLD terminal of the MICROCOMPUTER

When the HOLD terminal (INPUT) of the MICROCOMPUTER is "H", the MICROCOMPUTER is judged to be operating correctly. When this terminal is "L", the main power cannot be turned on. Therefore, be sure to check the terminal voltage of the HOLD terminal before exchange.
When the MICROCOMPUTER is not defective, the HOLD terminal can also go "L" when the POWER AMPLIFIER has any abnormalities that triggers the abnormality detection circuit on the MAIN C. B. that sets the HOLD terminal to "L".

- **Good or no good judgment of the MICROCOMPUTER**

① Turn on the AC main power.
② Confirm that the main power is turned on and the HOLD terminal of the MICROCOMPUTER keeps the "H" level or not.
③ When the HOLD terminal is "L" level, the abnormality detection circuit is judged to be working correctly and the MICROCOMPUTER is judged to be good.

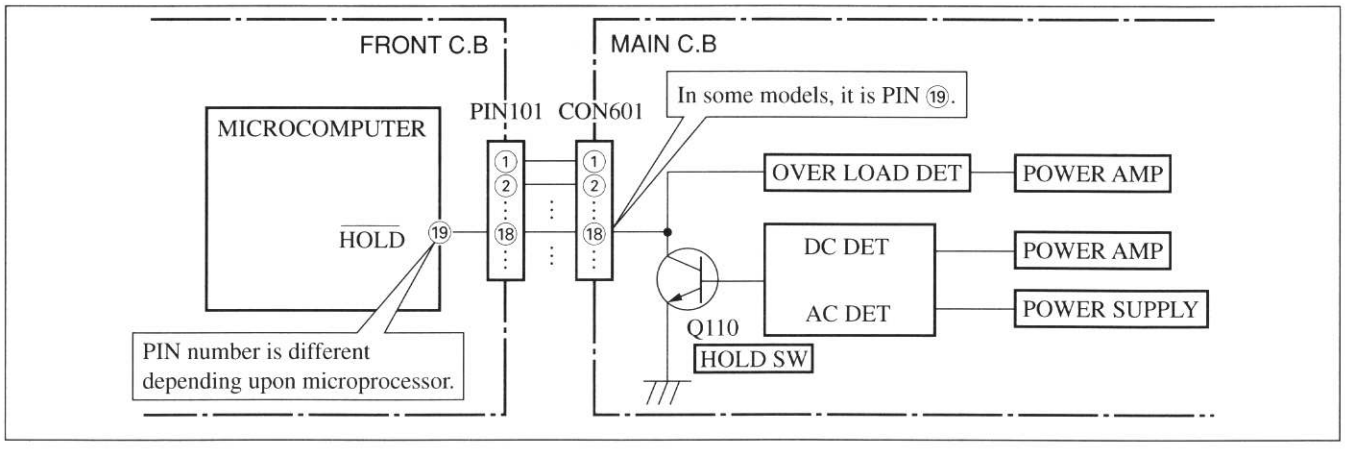


Fig-2-1

In such a case, check also if the POWER AMPLIFIER circuit or power supply circuit has any abnormalities or not.

2-2. Regarding reset

There are cases that the machine does not work correctly because the MICROCOMPUTER is not reset even though the AC power cord is re-inserted, or the software reset (pressing the STOP key + POWER key) is performed.
When the above described phenomenon occurs, it can lead to wrong judgment as if the MICROCOMPUTER is defective and to exchange the MICROCOMPUTER. In such a case, perform the forced-reset by the following procedure and check good or no good of the MICROCOMPUTER.

① Remove the AC power cord.

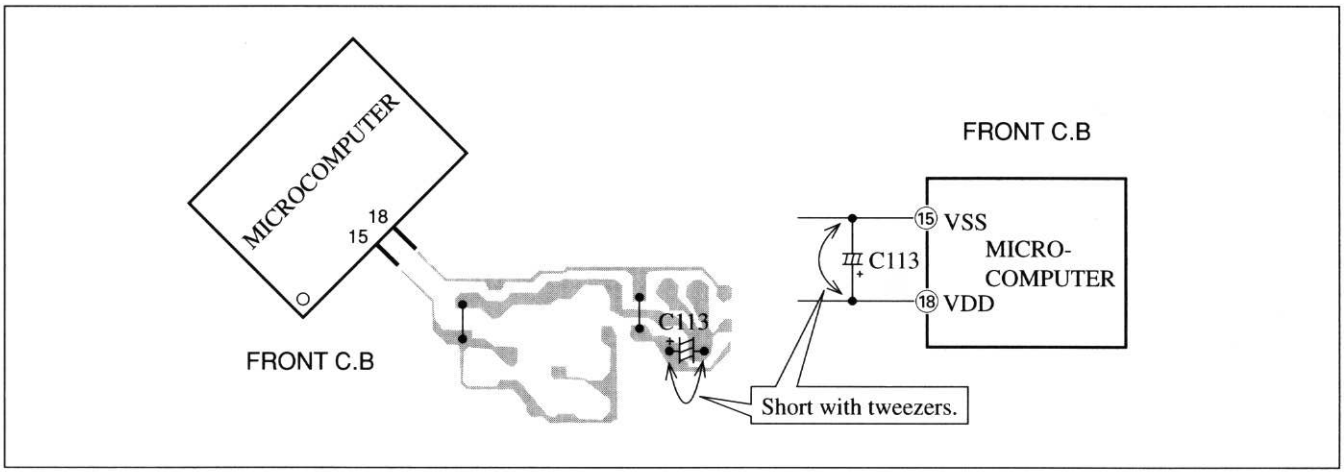


Fig-2-2

② Short both ends of the electrolytic capacitor C113 that is connected to VDD of the MICROCOMPUTER with tweezers.
③ Connect the AC power cord again. If the MICROCOMPUTER returns to the normal operation, the MICROCOMPUTER is good.

Note: The reference number or MICROCOMPUTER pin number of transistor (Q110) and electrolytic capacitor (C113) can change depending on the models. Be sure to check the reference numbers on schematic diagram before starting the discharging work.

2-3. Confirmation of soldering state of MICROCOMPUTER

Check the soldering state of the MICROCOMPUTER in addition to the above described procedures. Be sure to exchange the MICROCOMPUTER after surely confirming that the trouble is not caused by poor soldering but the MICROCOMPUTER itself.

ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	8Z-NFA-631-010		C-IC,M38B59MFH-P109FP
	87-A21-218-010		IC,NJL64H380A
	87-017-889-010		IC,NJM4558LD
	87-A20-715-010		IC,M62439SP
	87-070-127-110		IC,LC72131 D
	87-A20-913-010		IC,LA1837NL
TRANSISTOR			
	87-026-610-080		TR,KTC3198GR
	87-A30-090-080		FET,2SK2541
	87-A30-234-080		TR,CSC4115BC
	89-213-702-010		TR,2SB1370 (1.8W)
	87-026-269-080		TR,DTA114ES
	87-026-609-080		TR,KTA1266GR
	87-026-219-080		TR,DTA144ES (0.3W)
	88-NF9-623-010		TR,2SD2478
	88-NF9-622-010		TR,2SB1616
	87-A30-190-080		TR,CC5551<5U>
	87-A30-091-080		FET,2SJ460
	87-026-218-080		TR,DTC144ES (0.2W)
	87-026-214-080		TR,DTA114YS (0.3W)
DIODE			
	87-A40-393-090		DIODE,1N5402GW(F20)<exp 5U>
	87-020-465-080		DIODE,1SS133 (110MA)<5U>
	87-A40-455-080		DIODE,RL203 GW<5U>
	87-A40-291-080		DIODE,1N4148 (CPT)<exp 5U>
	87-017-932-080		ZENER,MTJ6.2B
	87-A40-336-080		ZENER,MTZJ27D T-72
	87-A40-345-080		ZENER,MTZJ10C
	87-A40-553-080		DIODE,1N4003 LES
	87-A40-466-080		ZENER,MTZJ2.7A
	87-017-931-080		ZENER,MTZJ5.6B
MAIN C.B			
C101	87-016-495-090		CAP,E 3300-25 SMG<exp 5U>
C101	87-A10-520-090		CAP,E 3300-35 M SMG<5U>
C103	87-016-051-090		CAP,E 2200-35 SMG<exp 5U>
C104	87-A10-011-090		CAP,E 2200-25 SMG<1U>
C105	87-018-127-080		CAP, CER 470P-50V
C106	87-010-260-080		CAP, ELECT 47-25V<5U>
C106	87-010-246-080		CAP, ELECT 47-35V<exp 5U>
C108	87-010-381-080		CAP, ELECT 330-16V
C110	87-010-263-080		CAP, ELECT 100-10V
C113	87-010-403-080		CAP, ELECT 3.3-50V
C114	87-010-374-080		CAP, ELECT 47-10V
C115	87-A10-303-080		CAP,M 0.047-50 J
C116	87-A10-303-080		CAP,M 0.047-50 J
C122	87-010-384-080		CAP, ELECT 100-25V
C122	87-010-247-080		CAP, ELECT 100-50V
C122	87-010-408-080		CAP, ELECT 47-50V<5U>
C123	87-010-384-080		CAP, ELECT 100-25V
C123	87-010-408-080		CAP, ELECT 47-50V<5U>
C152	87-010-396-080		CAP,E 470-35 SME<HA>
C207	87-010-545-080		CAP, ELECT 0.22-50V
C208	87-010-545-080		CAP, ELECT 0.22-50V
C209	87-A11-154-080		CAP,TC U 4700P-16 Z F
C210	87-A11-154-080		CAP,TC U 4700P-16 Z F
C211	87-010-403-080		CAP, ELECT 3.3-50V
C212	87-010-403-080		CAP, ELECT 3.3-50V
C213	87-010-260-080		CAP, ELECT 47-25V
C214	87-010-260-080		CAP, ELECT 47-25V
C217	87-A10-304-080		CAP,M 0.056-50 J
C218	87-A10-304-080		CAP,M 0.056-50 J
C219	87-010-544-080		CAP, ELECT 0.1-50V
C220	87-010-544-080		CAP, ELECT 0.1-50V
C223	87-A11-155-080		CAP,TC U 0.01-16 Z F
C224	87-A11-155-080		CAP,TC U 0.01-16 Z F
C229	87-018-123-080		CAP, CER 220P-50V
C230	87-018-123-080		CAP, CER 220P-50V
C235	87-A11-148-080		CAP,TC U 0.1-50 Z F<HA>
C236	87-A11-148-080		CAP,TC U 0.1-50 Z F<HA>
C301	87-018-131-080		CAP, CER 1000P-50V
C302	87-018-131-080		CAP, CER 1000P-50V
C303	87-018-195-080		CAP, CER 1200P-16V
C304	87-018-195-080		CAP, CER 1200P-16V
C307	87-010-263-080		CAP, ELECT 100-10V
C308	87-010-263-080		CAP, ELECT 100-10V
C311	87-A10-307-080		CAP,M 0.1-50 J
C312	87-A10-307-080		CAP,M 0.1-50 J
C315	87-010-374-080		CAP, ELECT 47-10V
C317	87-010-546-080		CAP, ELECT 0.33-50V
C318	87-010-546-080		CAP, ELECT 0.33-50V
C326	87-018-205-080		CAP, CERA-SOL 0.022
C327	87-A11-148-080		CAP,TC U 0.1-50 Z F<HA>
C360	87-010-401-080		CAP, ELECT 1-50V
C361	87-010-374-080		CAP, ELECT 47-10V
C399	87-018-127-080		CAP, CER 470P-50V
C401	87-010-545-080		CAP, ELECT 0.22-50V
C402	87-010-545-080		CAP, ELECT 0.22-50V
C403	87-018-118-080		CAP,TC-U 82P-50 B
C404	87-018-118-080		CAP,TC-U 82P-50 B
C411	87-010-405-080		CAP, ELECT 10-50V
C412	87-010-405-080		CAP, ELECT 10-50V
C452	87-010-382-080		CAP, ELECT 22-25V
C459	87-018-128-080		CAP, CERA-SOL SS 560P
C461	87-018-126-080		CAP,TC-U 390P-50 B
C462	87-018-126-080		CAP,TC-U 390P-50 B
C601	87-018-195-080		CAP, CER 1200P-16V
C602	87-018-195-080		CAP, CER 1200P-16V
C611	87-010-545-080		CAP, ELECT 0.22-50V
C612	87-010-545-080		CAP, ELECT 0.22-50V
C613	87-010-545-080		CAP, ELECT 0.22-50V
C614	87-010-545-080		CAP, ELECT 0.22-50V
C615	87-018-104-080		CAP,TC-U 10P-50 SL
C616	87-010-260-080		CAP, ELECT 47-25V
C617	87-010-260-080		CAP, ELECT 47-25V
C701	87-010-404-080		CAP, ELECT 4.7-50V
C702	87-A11-155-080		CAP,TC U 0.01-16 Z F
C703	87-A11-155-080		CAP,TC U 0.01-16 Z F
C704	87-018-131-080		CAP, CER 1000P-50V
C705	87-018-131-080		CAP, CER 1000P-50V
C706	87-018-131-080		CAP, CER 1000P-50V
C707	87-010-112-080		CAP, ELECT 100-16V
C708	87-A11-144-080		CAP,TC U 0.1-50 K B
C709	87-010-248-080		CAP, ELECT 220-10V
C710	87-010-112-080		CAP, ELECT 100-16V
C712	87-018-149-080		CAP,TC-U 15P-50 CH
C713	87-018-149-080		CAP,TC-U 15P-50 CH
C714	87-010-112-080		CAP, ELECT 100-16V
C715	87-018-119-080		CAP, CER 100P-50V
C737	87-A11-155-080		CAP,TC U 0.01-16 Z F
C751	87-A11-112-080		CAP,TC U 1000P-50 JCH<exp 5U>
C753	87-010-408-080		CAP, ELECT 47-50V
C755	87-A11-144-080		CAP,TC U 0.1-50 K B
C758	87-010-112-080		CAP, ELECT 100-16V
C759	87-A11-155-080		CAP,TC U 0.01-16 Z F
C761	87-010-404-080		CAP, ELECT 4.7-50V
C762	87-010-400-080		CAP, ELECT 0.47-50V
C763	87-010-401-080		CAP, ELECT 1-50V
C764	87-010-401-080		CAP, ELECT 1-50V
C765	87-018-115-080		CAP, CER 47P-50V
C766	87-010-407-080		CAP, ELECT 33-50V
C768	87-A11-147-080		CAP,TC U 0.047-50 Z F
C769	87-010-403-080		CAP, ELECT 3.3-50V

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C771	87-010-406-080		CAP, ELECT 22-50
C773	87-018-131-080		CAP, CER 1000P-50V
C774	87-010-405-080		CAP, ELECT 10-50V
C783	87-018-199-080		CAP, CER 3300P
C784	87-018-199-080		CAP, CER 3300P
C785	87-010-405-080		CAP, ELECT 10-50V
C786	87-010-405-080		CAP, ELECT 10-50V
C787	87-A11-153-080		CAP,TC U 2200P-16 Z F
C788	87-A11-153-080		CAP,TC U 2200P-16 Z F
C789	87-010-403-080		CAP, ELECT 3.3-50V
C790	87-010-403-080		CAP, ELECT 3.3-50V
C805	87-A11-144-080		CAP,TC U 0.1-50 K B
C807	87-A11-144-080		CAP,TC U 0.1-50 K B
C813	87-018-131-080		CAP, CER 1000P-50V
C902	87-A11-148-080		CAP,TC U 0.1-50 Z F
C934	87-A11-155-080		CAP,TC U 0.01-16 Z F
C935	87-A11-155-080		CAP,TC U 0.01-16 Z F
C936	87-A11-155-080		CAP,TC U 0.01-16 Z F
C943	87-A11-144-080		CAP,TC U 0.1-50 K B
C944	87-018-104-080		CAP,TC-U 10P-50 SL
CF802	87-008-261-010		FILTER, SFE10.7MA5-A
CN301	87-A60-620-010		CONN,3P V 2MM JMT
CN351	87-A60-625-010		CONN,8P V 2MM JMT
CN601	88-NF9-657-010		CONN,30P H BLK TYK-B(X)
CN602	87-099-194-010		CONN,6P 6216V
FB602	87-008-372-080		FILTER, EMI BL OIRNI<1U,5U>
FCC1	88-906-251-110		FF-CABLE,6P 1.25
FFE801	A8-8ZA-190-030		8ZA-1 FEUNM<5U>
FFE801	A8-8ZA-193-070		8ZA-1 YFEUNC<exp 5U>
J201	87-A60-602-010		JACK,DIA6.3 BLK ST W/SW TC
J202	87-A60-238-010		TERMINAL,SP 4P (MSC)
J601	87-A60-881-010		JACK,PIN 2P MSP 242V05 PBSN
J801	87-A60-202-010		TERMINAL,ANT 4P MSP-154V-02
L201	87-003-383-010		COIL,1UH-S
L202	87-003-383-010		COIL,1UH-S
L451	87-007-342-010		COIL,OSC 85K BIAS
L701	87-005-847-080		COIL,2.2UH(CECS)
L771	87-A50-266-010		COIL,FM DET-2N(TOK)
L772	87-A91-110-010		FLTR,PCFJZH-450 (TOK)
L801	87-005-847-080		COIL,2.2UH(CECS)
L981	8Z-ZA1-664-010		COIL,AM PACK 4(TOK)
R124	87-A00-261-080		RES,M/F 0.56-1W J<1U,5U>
R223	87-A00-258-080		RES,M/F 0.22-1W J
R224	87-A00-258-080		RES,M/F 0.22-1W J
RY101	87-045-389-010		RELAY,OSA-SS-212DM5
W101	83-NE2-618-110		F-CABEL,5P-2.5
WH102	87-A90-459-010		HLDR,WIRE 2.5-5P
X701	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309

FRONT C.B

C101	87-A11-147-080		CAP,TC U 0.047-50 Z F
C102	87-A11-147-080		CAP,TC U 0.047-50 Z F
C103	87-015-699-040		CAP,E 10-50 7L
C104	87-010-246-040		CAP,E 47-35 SME
C106	87-010-246-040		CAP,E 47-35 SME
C110	87-018-205-080		CAP, CERA-SOL 0.022
C111	87-A11-155-080		CAP,TC U 0.01-16 Z F
C112	87-018-131-080		CAP, CER 1000P-50V

*NOTE: exp = except
5u = 115u
1u = 111u

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C113	87-018-205-080		CAP, CERA-SOL 0.022
C114	87-018-205-080		CAP, CERA-SOL 0.022
C115	87-018-205-080		CAP, CERA-SOL 0.022
C116	87-018-128-080		CAP, CERA-SOL SS 560P
C117	87-018-131-080		CAP, CER 1000P-50V
C118	87-018-147-080		CAP,TC-U 10P-50 CH
C119	87-010-401-040		CAP,E 1-50 SME
C120	87-018-205-080		CAP, CERA-SOL 0.022
C121	87-010-248-040		CAP,E 220-10 SME
C122	87-010-378-040		CAP,E 10-16
C123	87-A11-147-080		CAP,TC U 0.047-50 Z F
C124	87-A11-152-080		CAP,TC U 1000P-50 Z F
C201	87-018-118-080		CAP,TC-U 82P-50 B
C202	87-018-117-080		CAP,TC-U 68P-50 SL
C205	87-018-117-080		CAP,TC-U 68P-50 SL
C208	87-018-117-080		CAP,TC-U 68P-50 SL
C209	87-018-117-080		CAP,TC-U 68P-50 SL
C210	87-018-117-080		CAP,TC-U 68P-50 SL
C211	87-A11-147-080		CAP,TC U 0.047-50 Z F
C213	87-010-421-040		CAP,E 4.7-50 5L
C214	87-010-404-040		CAP,E 4.7-50 SME
C701	87-010-384-040		CAP,E 100-25 SME
C702	87-A11-155-080		CAP,TC U 0.01-16 Z F
C801	87-018-131-080		CAP, CER 1000P-50V
CN101	88-NF9-658-010		CONN,30P BLK TYK-B(P)
CN701	87-A60-674-010		CONN,10P H 2MM JMT
CN801	87-099-015-010		CONN,13P 6216V
FCC2	88-913-221-110		FF-CABLE, 13P 1.25 220MM
FL201	88-NF9-630-010		FL,10-BT-207GK
L101	87-A50-050-010		COIL,CLK 4.19M(COI)
S101	87-A90-535-010		SW,RTRY EC16B24304
S310	87-A90-164-080		SW,TACT SKQAB(N)
S311	87-A90-164-080		SW,TACT SKQAB(N)
S312	87-A90-164-080		SW,TACT SKQAB(N)
SFR701	87-024-350-080		SFR 2.2K DIA 6H

AC1 C.B

⚠ F101	87-A91-209-010		FUSE,500MA 250V T 50T<LH,HA>
⚠ F101	87-A91-224-010		FUSE,1.25A 125V T 51S<1U>
⚠ F101	87-A91-265-010		FUSE,2A 125V F 51NM<5U>
⚠ FC1	87-033-213-080		CLAMP, FUSE<1U,5U>
⚠ FC2	87-033-213-080		CLAMP, FUSE<1U,5U>
⚠ FC101	87-033-147-010		FUSE CLAMP<LH,HA>
⚠ FC102	87-033-147-010		FUSE CLAMP<LH,HA>
⚠ PT101	8Z-NFA-621-010		PT,U EI57-35 ZNF-A<1U>
⚠ PT101	8Z-NFA-622-010		PT,LH EI57-35 ZNF-A<LH,HA>
⚠ PT101	8Z-NFA-626-010		PT,U1 EI66-35 ZNF-A<5U>
⚠ SW101	87-A90-165-010		SW,SL 1-2-3 SWS2301<LH,HA>
⚠ T1	87-A60-317-010		TERMINAL, 1P MSC<1U,5U>
⚠ T2	87-A60-317-010		TERMINAL, 1P MSC<1U,5U>
⚠ T101	87-A60-317-010		TERMINAL, 1P MSC<LH,HA>
⚠ T102	87-A60-317-010		TERMINAL, 1P MSC<LH,HA>

AC2 C.B

WH101	87-A90-459-010		HLDR,WIRE 2.5-5P

TRANSISTOR ILLUSTRATION

E C B

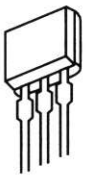
KTA1266GR
KTC3198GR

E C B

CC5551

B C E

2SB1370



B C E

CSC4115BC

S D G

2SK2541

E C B

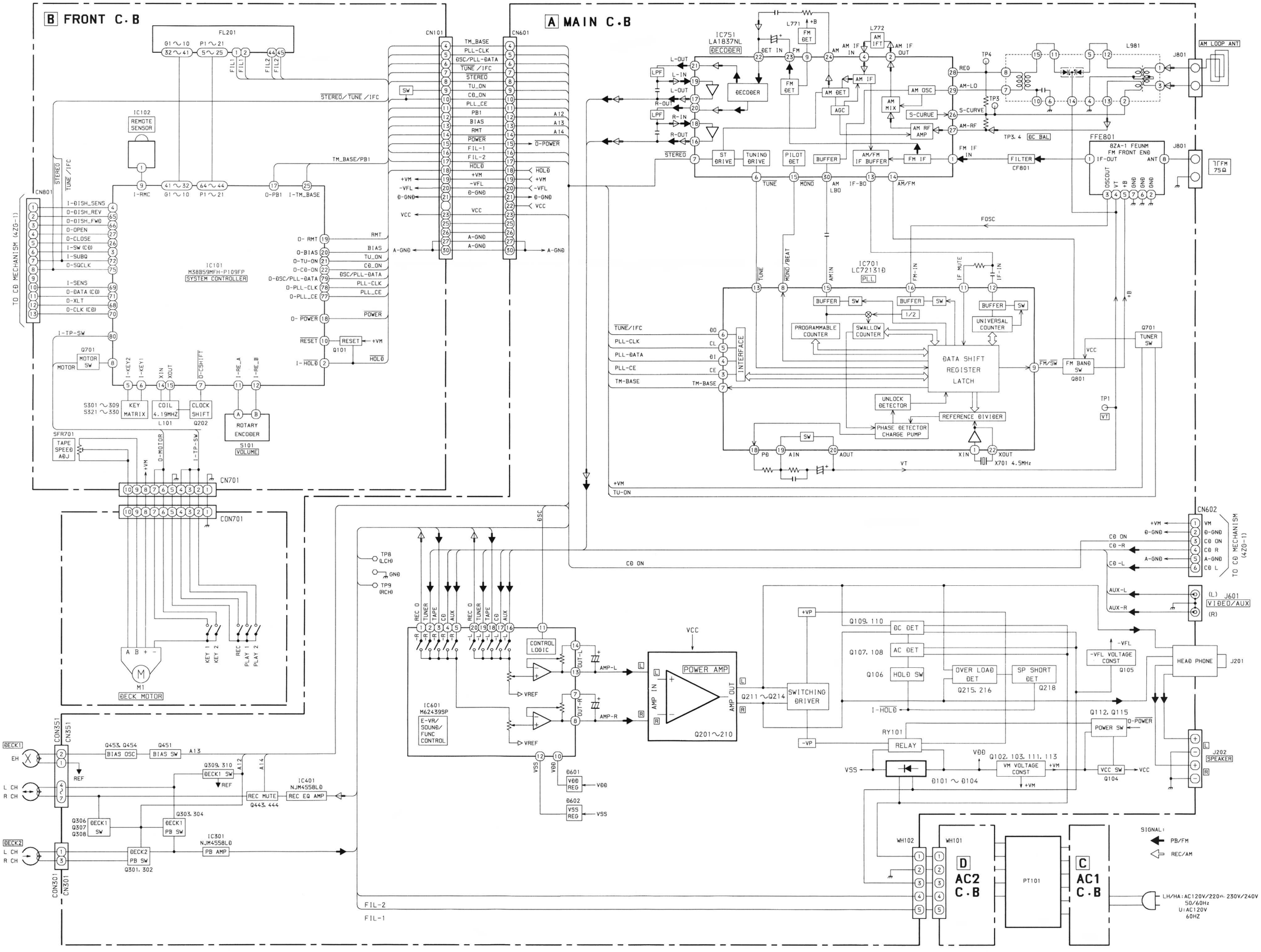
DTC144ES
DTA114YS
DTA114ES
DTA144ES

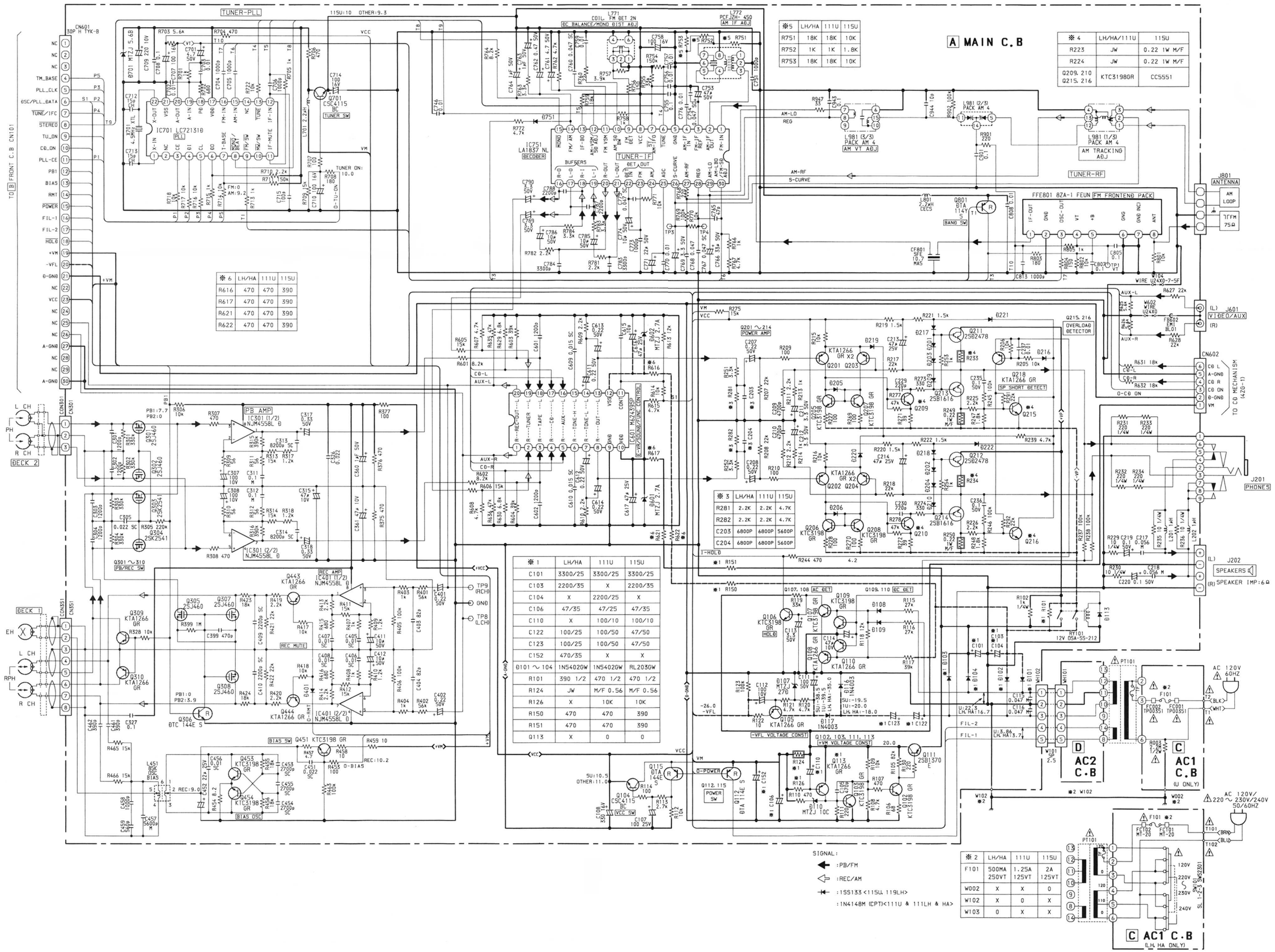
B C E

2SD2478
2SB1616

S D G

2SJ460


B FRONT C.B
A MAIN C.B
FL201
CN101
CN601
IC102
REMOTE SENSOR
IC101
M38B59MFH-P109FP
SYSTEM CONTROLLER
CN801
TO CD MECHANISM (4ZG-1)
Q701
MOTOR SW
KEY MATRIX
COIL 4.19MHZ
CLOCK SHIFT
L101
Q202
S301 ~309
S321 ~330
ROTARY ENCODER
S101
VOLUME
SFR701
TAPE SPEED ADJ
CN701
CON701
M1
DECK MOTOR
IC751
LA1837NL
DECODER
IC701
LC72131D
PLL
INTERFACE
PROGRAMMABLE COUNTER
SWALLOW COUNTER
UNIVERSAL COUNTER
DATA SHIFT REGISTER LATCH
UNLOCK DETECTOR
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
X701 4.5MHz
FFE801
8ZA-1 FEUNM
FM FRONT END
CF801
FILTER
J801
AM LOOP ANT
75Ω
Q701
TUNER SW
FM BAND SW
Q801
TP1
VT
TP3. 4 DC BAL
TP4
L981
L771
L772
CN602
TO CD MECHANISM (4ZG-1)
J601
VIDEO/AUX
J201
HEAD PHONE
J202
SPEAKER
Q112, Q115
POWER SW
Q104
VCC SW
RY101
RELAY
Q102. 103. 111. 113
VM VOLTAGE CONST
D101 ~ D104
SWITCHING DRIVER
Q211 ~Q214
POWER AMP
Q201~210
IC601
M62439SP
E-VR/ SOUND/ FUNC CONTROL
CONTROL LOGIC
Q109. 110
DC DET
Q107. 108
AC DET
Q106
HOLD SW
OVER LOAD DET
Q215. 216
SP SHORT DET
Q218
-VFL VOLTAGE CONST
Q105
CON351
CN351
CON301
CN301
DECK1
DECK2
EH
L CH
R CH
BIAS OSC
Q453. Q454
BIAS SW
Q451
DECK1 SW
Q309. 310
REC MUTE
Q443. 444
REC EQ AMP
IC401
NJM4558LD
DECK1 SW
Q306
Q307
Q308
DECK1 PB SW
Q303. 304
DECK2 PB SW
Q301. 302
IC301
NJM4558LD
PB AMP
TP8 (LCH)
TP9 (RCH)
GND
REC O
TUNER
TAPE
CD
AUX
AMP-L
AMP-R
VREF
IC601
M62439SP
E-VR/ SOUND/ FUNC CONTROL
Q601
VDD REG
Q602
VSS REG
WH102
WH101
D
AC2 C.B
PT101
C
AC1 C.B
SIGNAL:
PB/FM
REC/AM
LH/HA: AC120V/220V, 230V/240V
50/60Hz
U: AC120V
60HZ



※5	LH/HA	111U	115U
R751	18K	18K	10K
R752	1K	1K	1.8K
R753	18K	18K	10K

※4	LH/HA/111U	115U
R223	JW	0.22 1W M/F
R224	JW	0.22 1W M/F
Q209, 210 Q215, 216	KTC3198GR	CC5551

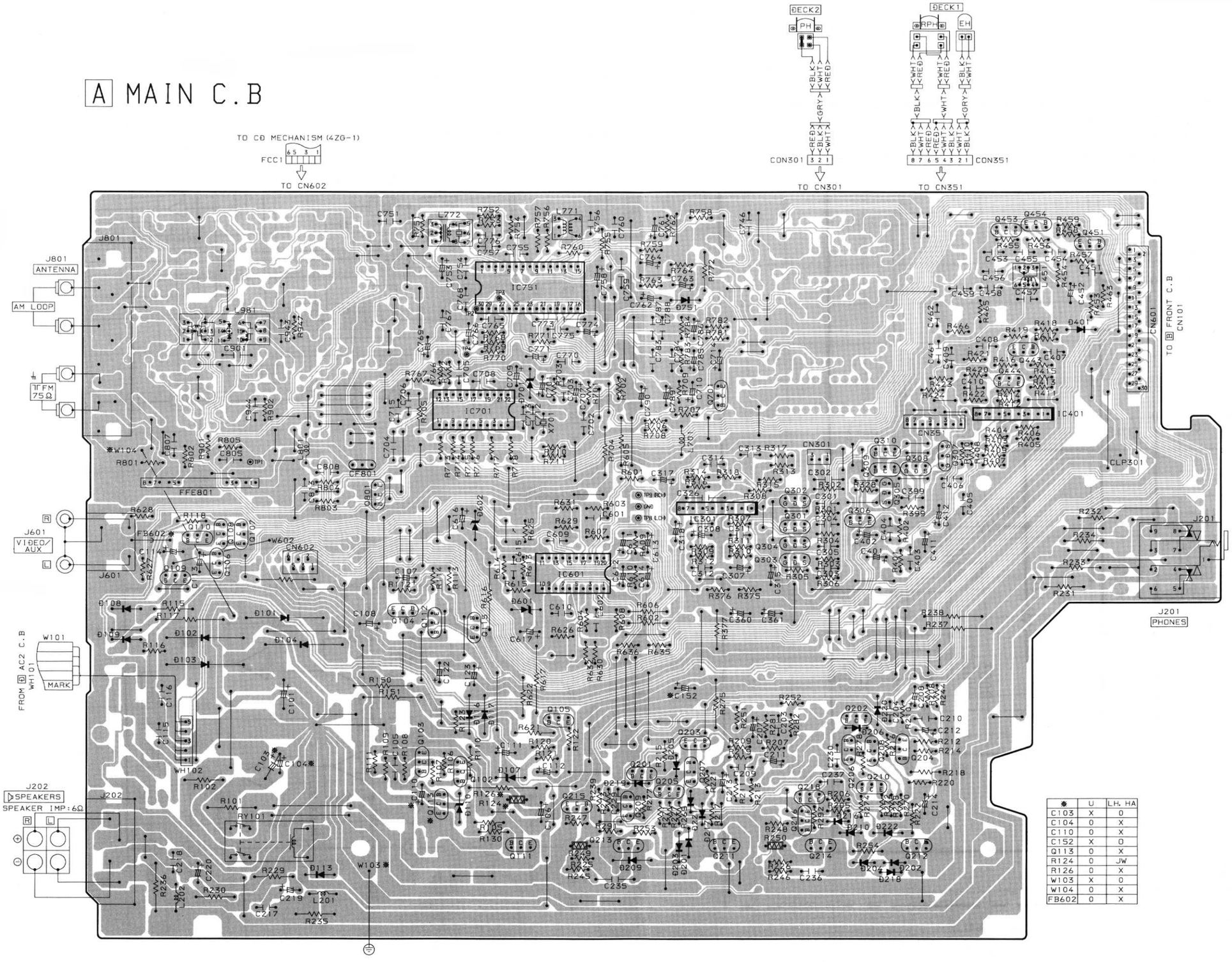
※6	LH/HA	111U	115U
R616	470	470	390
R617	470	470	390
R621	470	470	390
R622	470	470	390

※3	LH/HA	111U	115U
R281	2.2K	2.2K	4.7K
R282	2.2K	2.2K	4.7K
C203	6800P	6800P	5600P
C204	6800P	6800P	5600P

※1	LH/HA	111U	115U
C101	3300/25	3300/25	3300/25
C103	2200/35	X	2200/35
C104	X	2200/25	X
C106	47/35	47/25	47/35
C110	X	100/10	100/10
C122	100/25	100/50	47/50
C123	100/25	100/50	47/50
C152	470/35	X	X
D101 ~ 104	1N5402GW	1N5402GW	RL203GW
R101	390 1/2	470 1/2	470 1/2
R124	JW	M/F 0.56	M/F 0.56
R126	X	10K	10K
R150	470	470	390
R151	470	470	390
Q113	X	0	0

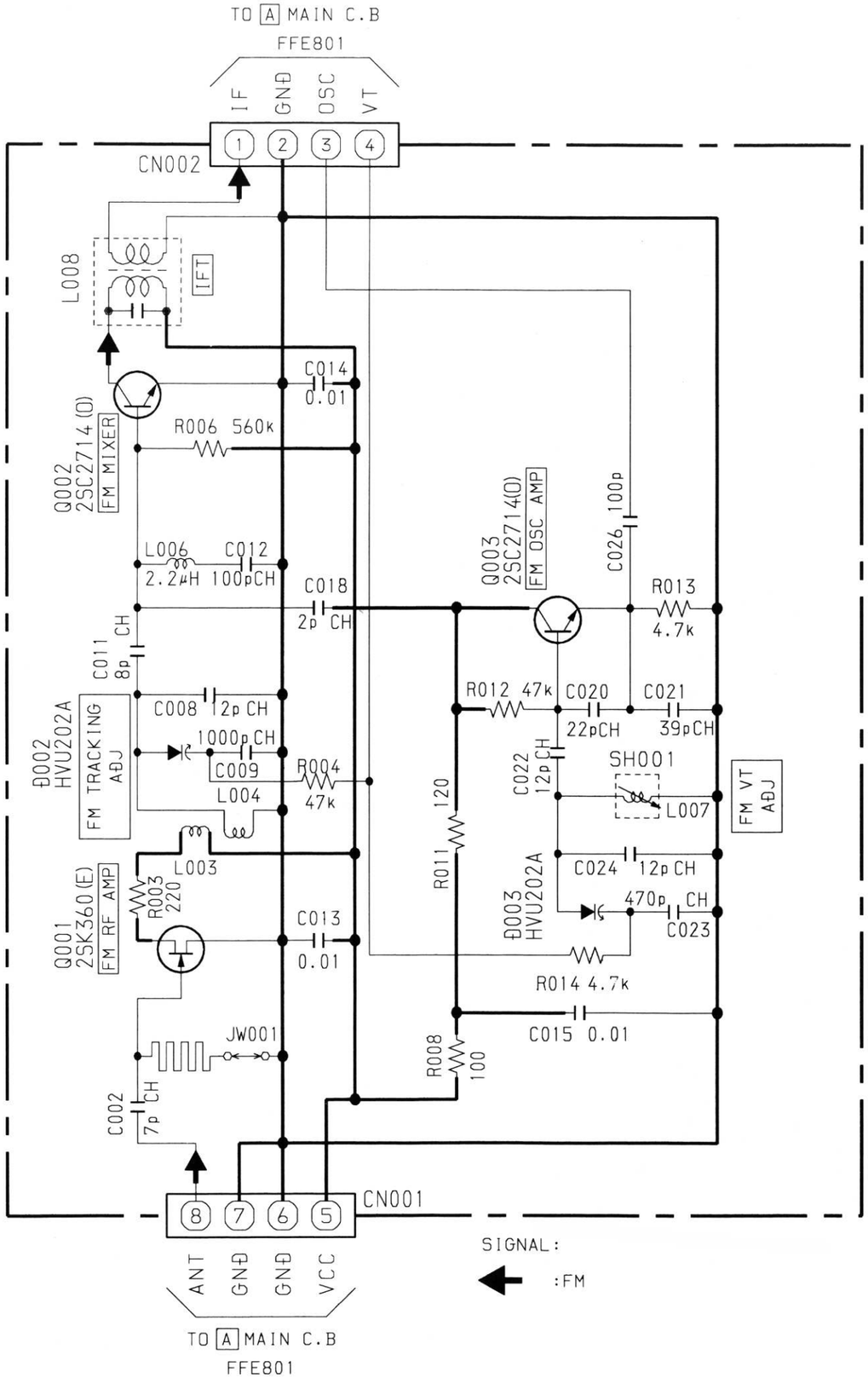
※2	LH/HA	111U	115U
F101	500MA 250VT	1.25A 125VT	2A 125VT
W002	X	X	0
W102	X	0	X
W103	0	X	X

A MAIN C.B

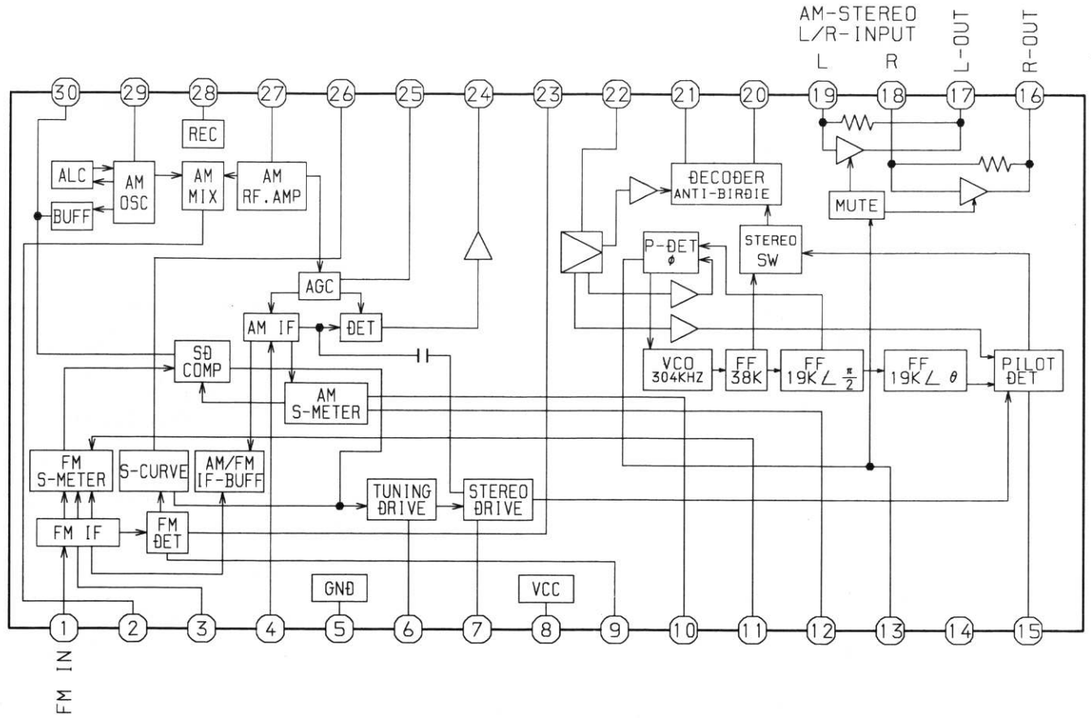


*	U	LH, HA
C103	X	0
C104	0	X
C110	0	X
C152	X	0
Q113	0	X
R124	0	JW
R126	0	X
W103	X	0
W104	0	X
FB602	0	X

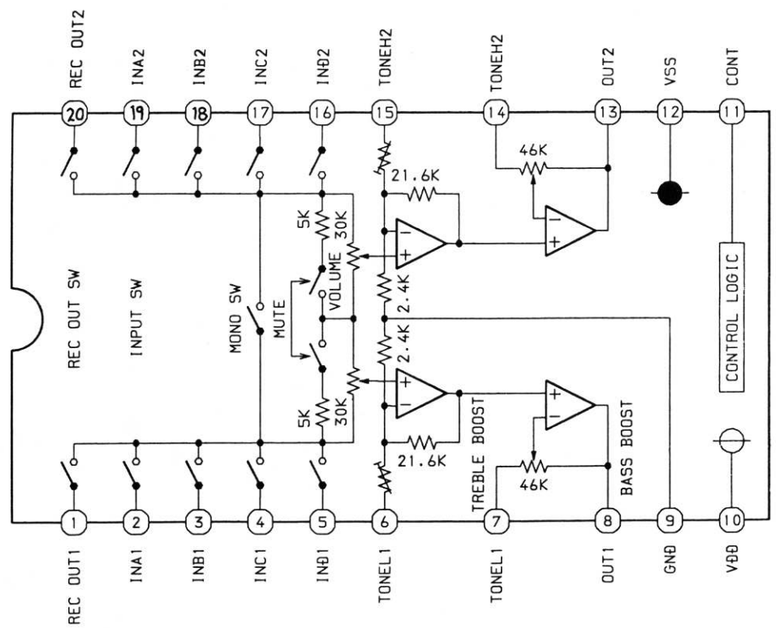
SCHEMATIC DIAGRAM – 2
TUNER FRONT END



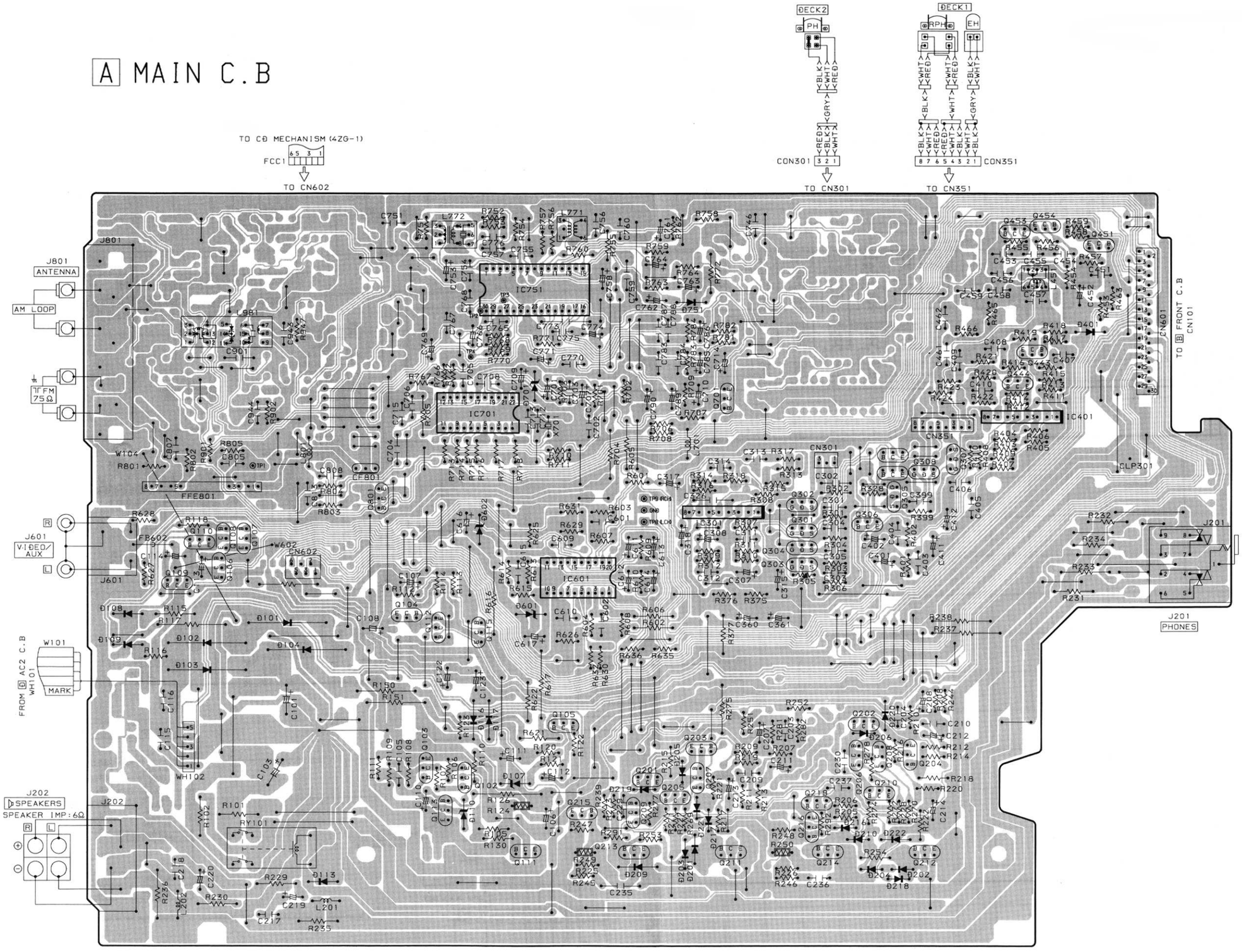
IC BLOCK DIAGRAM
IC, LA1837NL

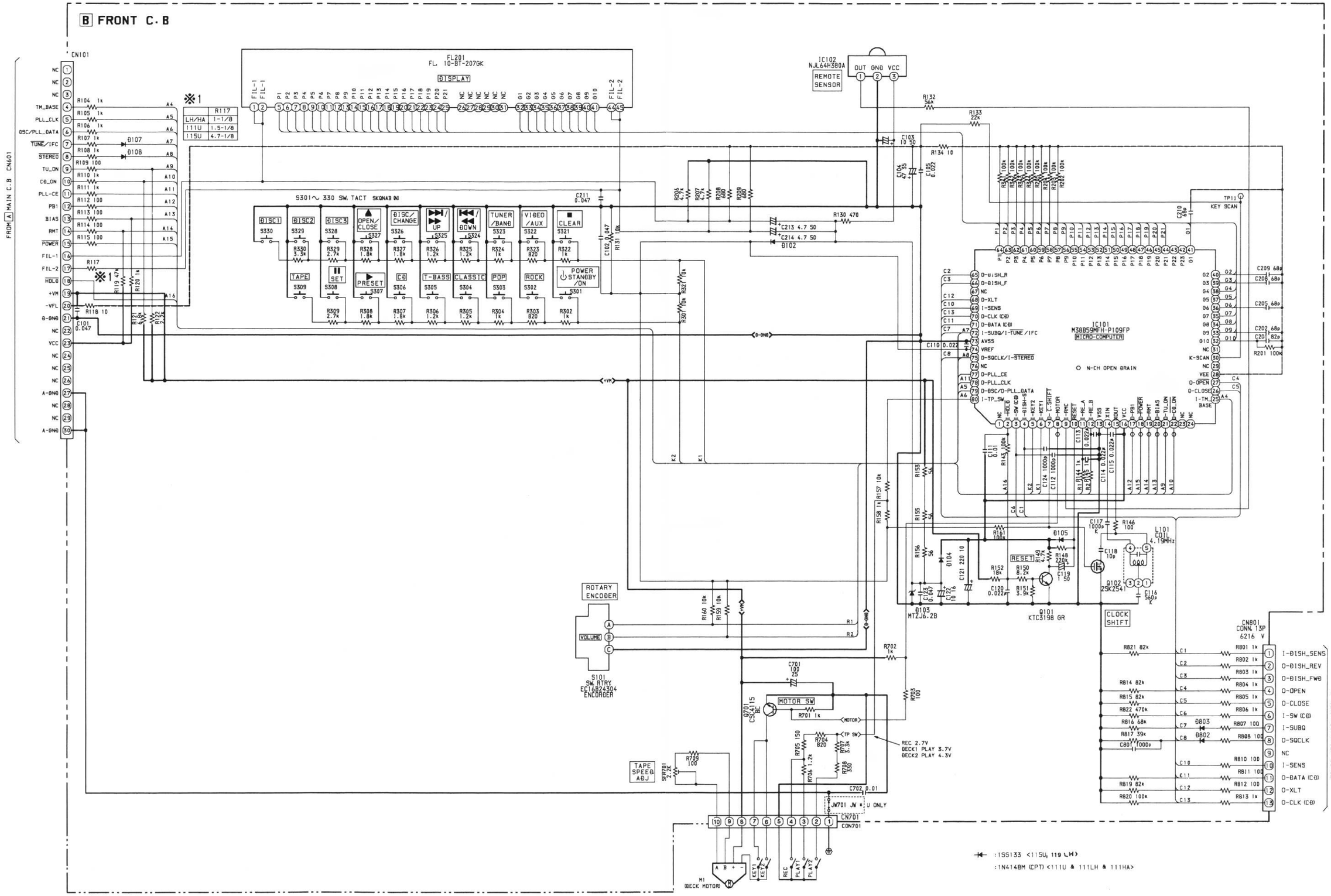


IC, M62439SP

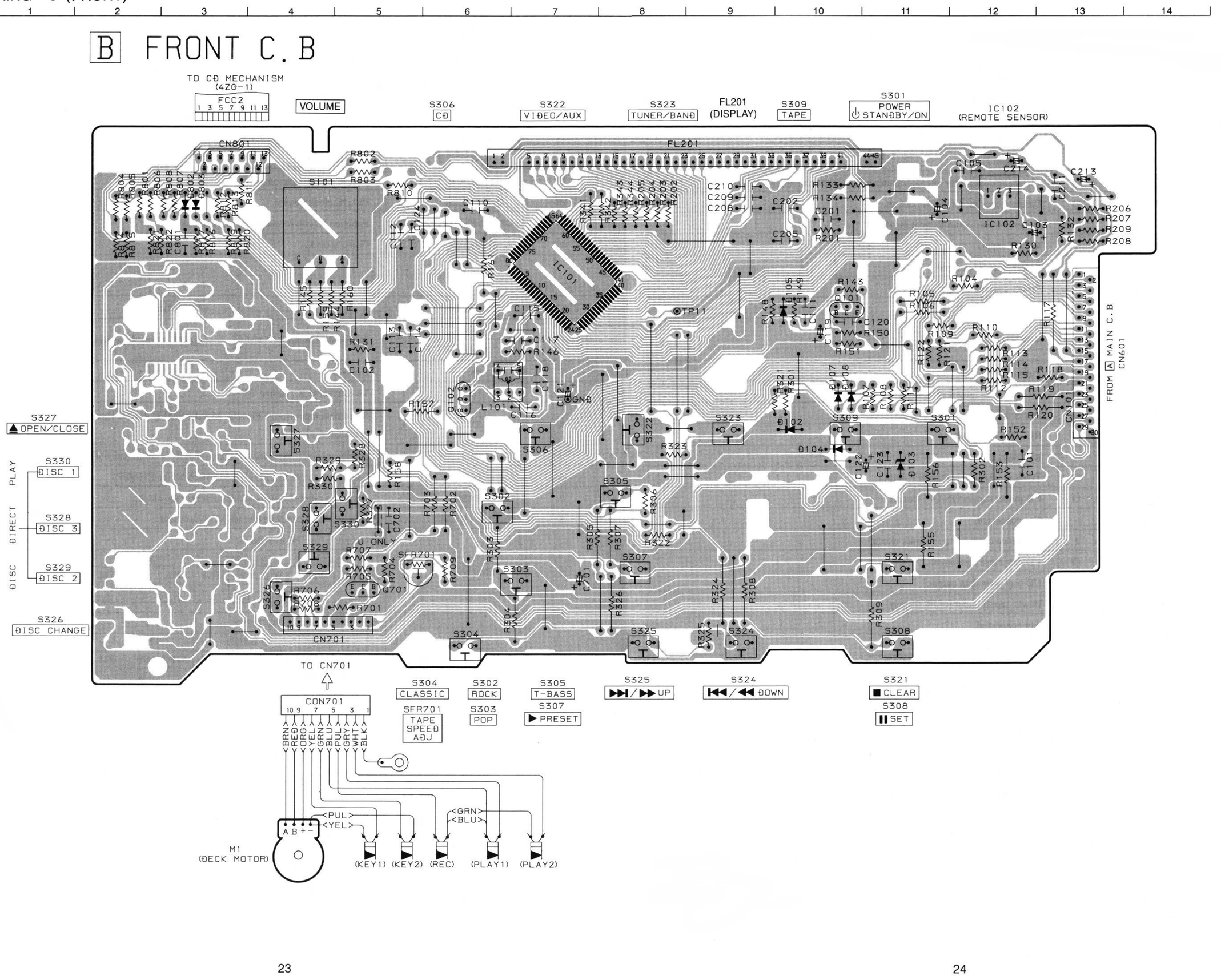


A MAIN C.B


TO CD MECHANISM (4ZG-1)
FCC1
TO CN602
DECK2
PH
CON301
TO CN301
DECK1
RPH
EH
CON351
TO CN351
J801
ANTENNA
AM LOOP
IFFM 75Ω
J601
VIDEO/ AUX
J202
SPEAKERS
SPEAKER IMP:6Ω
W101
MARK
FROM B AC2 C.B WH101
WH102
J201
PHONES
TO B FRONT C.B CN101
IC751
IC701
IC601
IC401
CN301
CN351
CN601
CLP301
FFE801
CFB01
EN602
W104
W402
RY101


B FRONT C.B
CN101
FROM A MAIN C.B CN601
FL201
FL 10-BT-207GK
DISPLAY
※1
R117
LH/HA 1-1/8
111U 1.5-1/8
115U 4.7-1/8
IC102
NJL6H380A
REMOTE SENSOR
OUT GND VCC
S301~ 330 SW. TACT SKQNAB 00
DISC1
DISC2
DISC3
OPEN/CLOSE
DISC/CHANGE
UP
DOWN
TUNER/BAND
VIDEO/AUX
CLEAR
TAPE
SET
PRESET
CD
T-BASS
CLASSIC
POP
ROCK
POWER STANDBY/ON
IC101
M38B59MFH-P109FP
MICRO-COMPUTER
N-CH OPEN BRAIN
KEY SCAN
K-SCAN
ROTARY ENCODER
VOLUME
S101
SW ROTARY
EC16B24304
ENCODER
MOTOR SW
REC 2.7V
DECK1 PLAY 3.7V
DECK2 PLAY 4.3V
TAPE SPEED ADJ
JW701 JW ※ U ONLY
CN701
CON701
M1
DECK MOTOR
RESET
CLOCK SHIFT
CN801
CONN 13P
6216 V
TO CD MECHANISM (4ZG-1)
I-DISH_SENS
O-DISH_REV
O-DISH_FWD
O-OPEN
O-CLOSE
I-SW (CD)
I-SUBQ
O-SQCLK
NC
I-SENS
I-DATA (CD)
O-XLT
O-CLK (CD)
Q101
KTC3198 GR
Q102
2SK2541
D103
MTZJ6.2B
D102
D104
D105
D107
D108
L101
C011
4.19MHz
: 1SS133 <115U, 119 LH>
: 1N4148M (CPT) <111U & 111LH & 111HA>

B FRONT C.B


TO CD MECHANISM (4ZG-1)
FCC2
1 3 5 7 9 11 13
VOLUME
S306 CD
S322 VIDEO/AUX
S323 TUNER/BAND
FL201 (DISPLAY)
S309 TAPE
S301 POWER ⏻ STANDBY/ON
IC102 (REMOTE SENSOR)
CN801
S101
FL201
IC101
TP11
S327 ▲OPEN/CLOSE
S330 DISC 1
S328 DISC 3
S329 DISC 2
S326 DISC CHANGE
PLAY
DIRECT
DISC
U ONLY
CN701
FROM A MAIN C.B CN601
TO CN701
CON701
10 9 7 5 3 1
BRN RED ORG YEL GRN BLU PUL GRY WHT BLK
S304 CLASSIC
S302 ROCK
S305 T-BASS
S325 ▶▶/▶▶ UP
S324 ◀◀/◀◀ DOWN
S321 ■ CLEAR
SFR701 TAPE SPEED ADJ
S303 POP
S307 ▶ PRESET
S308 ❚❚ SET
M1 (DECK MOTOR)
A B + –
PUL
YEL
GRN
BLU
(KEY1) (KEY2) (REC) (PLAY1) (PLAY2)

IC DESCRIPTION

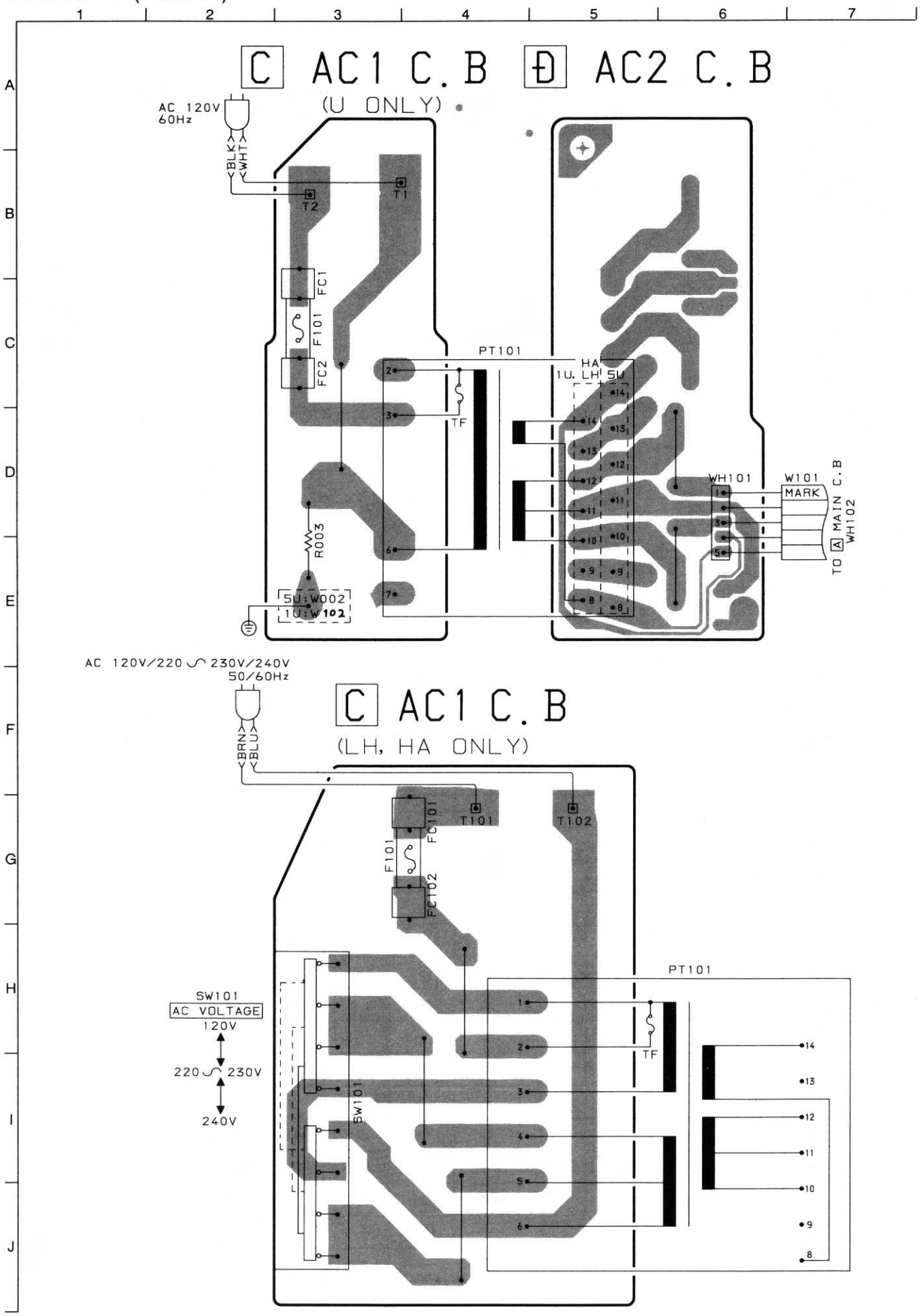
IC, M38B59MFH-P109FP

Pin No.	Pin Name	I/O	Description
1	NC	-	Not connected.
2	I-$\overline{\text{HOLD}}$	I	Hold input.
3	I-SW(CD)	I	CD mechanical switch input.
4	I-DISH-S	I	CD turntable photo sensor input.
5	I-KEY2	I	KEY input 2.
6	I-KEY1	I	KEY input 1.
7	O-$\overline{\text{C.SHIFT}}$	O	Clock shift output for microcomputer when tuner receiving broadcast.
8	O-MOTOR	O	Cassette deck motor control output.
9	I-RMC	I	System remote control signal input.
10	$\overline{\text{RESET}}$	I	RESET input.
11	I-RE_A	I	Rotary encoder A input.
12	I-RE_B	I	Rotary encoder B input.
13	VSS	–	Connected to GND.
14	XIN	–	4.19 MHz oscillator circuit.
15	XOUT	–	
16	VCC	–	Power supply.
17	O-PB1	O	Cassette deck output switching.
18	O-$\overline{\text{POWER}}$	O	Power control output.
19	O-RMT	O	REC MUTE output.
20	O-BIAS	O	Bias output.
21	O-TU_ON	O	Tuner power supply ON/OFF output.
22	O-$\overline{\text{CD\_ON}}$	O	CD power supply ON/OFF output.
23,24	NC	–	Not connected.
25	I-TM_BASE	I	Reference clock input for timer watch.
26	O-CLOSE	O	CD tray close data output.
27	O-$\overline{\text{OPEN}}$	O	CD tray open data output.
28	VEE	–	Power supply input for FL display.
29	NC	–	Not connected.
30	K-SCAN	O	Initial scan output.
31	NC	-	Not connected.
32~41	G10~G1	O	FL grid output G1~G10.
42, 43	P23, P22	O	FL segment output (Not connected).
44~62	P21~P3	O	FL segment output.
63	P2	I/O	FL segment output.
64	P1	O	FL segment output.
65	O-DISH_REV	O	CD turntable reverse rotation output.
66	O-DISH_FWR	O	CD turntable forward rotation output.
67	NC	–	Not connected.
68	O-XLT	O	CD IC control output.
69	I-SENS	I	CD IC control input.
70	O-CLK(CD)	O	CD clock output.
71	O-DATA(CD)	O	CD data output.

Pin No.	Pin Name	I/O	Description
72	O-SUBQ/ I-TUNE/I-IFC	O/I	CD SUBQ data output/ TUNER signal input/ TUNER IF count serial data input.
73	AVSS	–	Connected to GND.
74	VREF	–	Power supply.
75	O-SQCLK/I-$\overline{\text{STEREO}}$	O/I	CD SQCLK output/ TUNER STEREO detected input.
76	NC	-	Not connected .
77	O-PLL_CE	O	PLL IC chip enable output.
78	O-PLL_CLK	O	PLL IC clock output.
79	O-DSC/O-PLL DATA	O	Function IC control output / PLL data output.
80	I-TP_SW	I	Cassette deck.

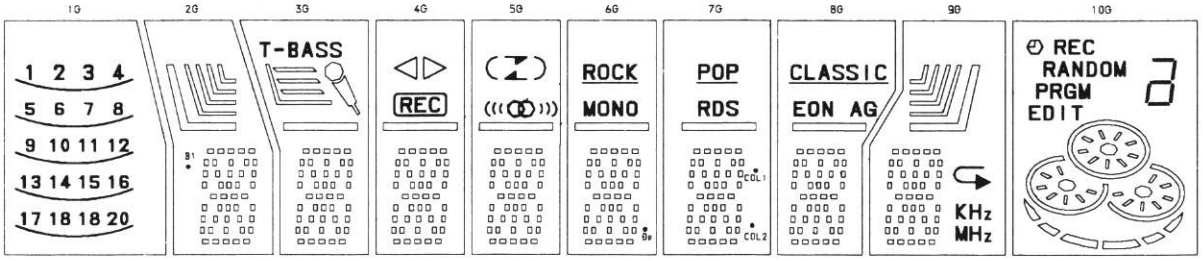
IC, LC72131D

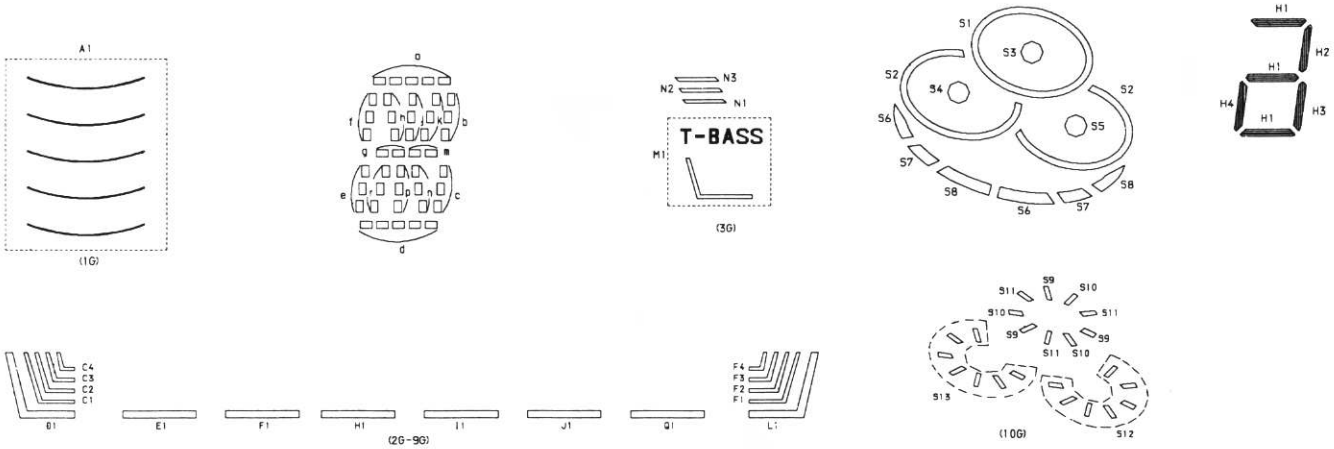
Pin No.	Pin Name	I/O	Description
1	XIN	I/O	A crystal oscillator (4.5MHz) is connected between these pins.
22	XOUT		
2	NC	–	Not used.
3	CE	I	To enable the IC. Active "H".
4	DI	I	Serial data input from CPU (IC, M38B59MFH-P109FP) when relevant key is operated. Active "H".
5	CL	I	Synchronization clock for serial data in (DI) or serial data out (DO).
6	DO	O	Serial data output to CPU (IC, M38B59MFH-P109FP).
7	T-BASE	O	Outputs a reference clock signal (8Hz) for the clock.
8	$\overline{\text{MONO}}$ / BEAT	O	Outputs "H" when MONO / BEAT is switched.
9	$\overline{\text{FM}}$ / $\overline{\text{SW}}$	O	Output "L" or "H" as follows: 2 BAND: AM H, FM L 3 BAND: LW H, MW H, FM L 3 BAND: MW H, SW L, FM L
10	$\overline{\text{MW}}$/SW	O	Outputs "L" or "H" as follows: 2 BAND: AM L, FM L 3 BAND: LW H, MW L, FM L 3 BAND: MW L, SW H, FM L
11	IF-MUTE	O	To control internal counter.
12	IF-IN	I	General purpose counter input.
13	$\overline{\text{TUNE}}$	I	Receives "L" when station is tuned.
14	NC	–	Not used.
15	AM-IN	I	Receives the AM local oscillator frequency signal.
16	FM-IN	I	Receives the FM local oscillator frequency signal.
17	VDD	–	Supply power to IC (+5V).
18	PD	O	PLL charge pump output.
19	A-IN	I	The MOS transistor for PLL active low pass filter.
20	A-OUT	O	
21	VSS	–	Ground.


C AC1 C.B
Đ AC2 C.B
(U ONLY)
AC 120V
60Hz
BLK
WHT
T1
T2
FC1
F101
FC2
PT101
TF
HA
1U, LH, 5U
R003
5U:W002
1U:W102
WH101
W101
MARK
TO A MAIN C.B
WH102
AC 120V/220 ∽ 230V/240V
50/60Hz
C AC1 C.B
(LH, HA ONLY)
BRN
BLU
T101
T102
FC101
F101
FC102
SW101
AC VOLTAGE
120V
220 ∽ 230V
240V

FLGRD ASSIGNMENT AND ANODE CONNECTION

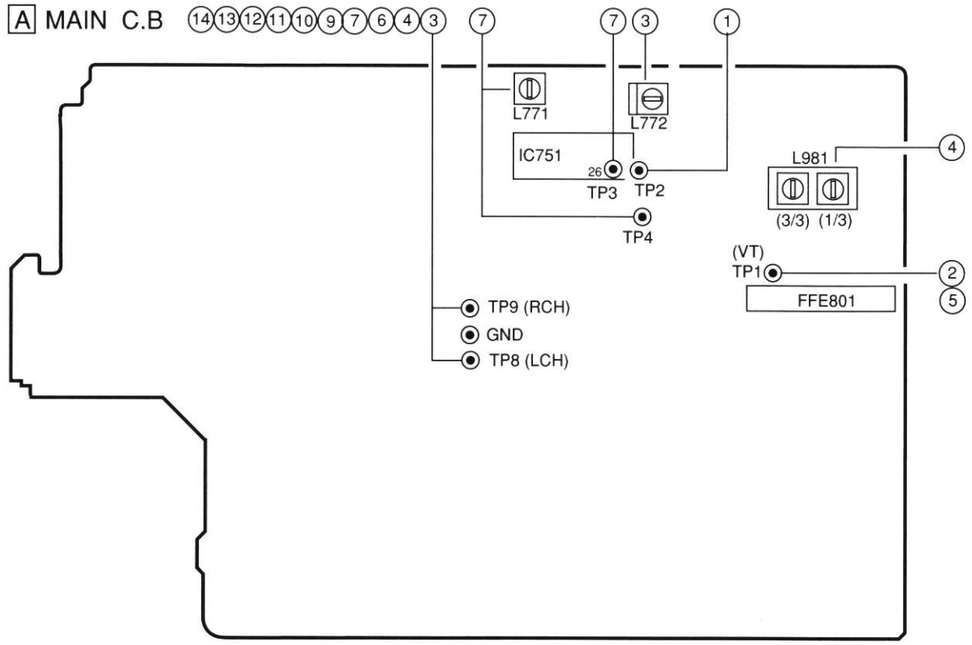
GRID ASSIGNMENT

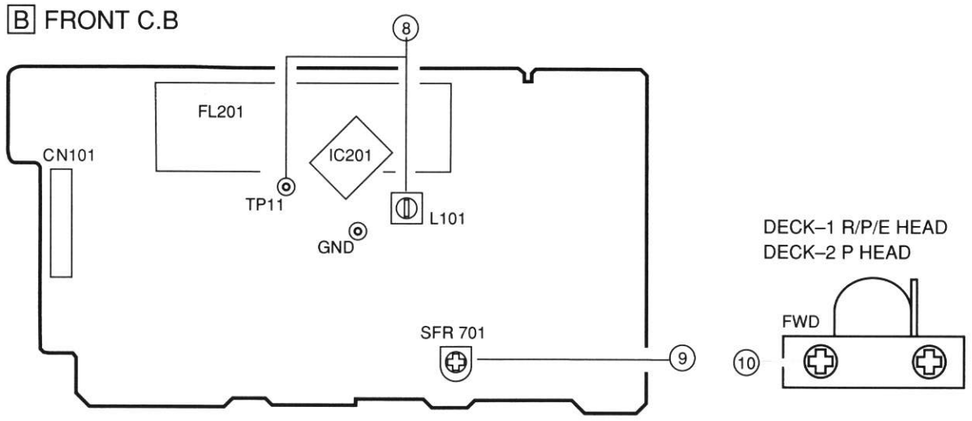




ANODE COLLECTION

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G
P1	**20**	d	d	d	d	d	d	d	d	S1
P2	**19**	n	n	n	n	n	n	n	n	S9
P3	**18**	p	p	p	p	p	p	p	p	S10
P4	**17**	r	r	r	r	r	r	r	r	S11
P5	**16**	e	e	e	e	e	e	e	e	S3
P6	**15**	c	c	c	c	c	c	c	c	S2
P7	**14**	g	g	g	g	g	g	g	g	S13
P8	**13**	m	m	m	m	m	m	m	m	S4
P9	**12**	f	f	f	f	f	f	f	f	S12
P10	**11**	b	b	b	b	b	b	b	b	S5
P11	**10**	k	k	k	k	k	k	k	k	S6
P12	**9**	j	j	j	j	j	j	j	j	S7
P13	**8**	h	h	h	h	h	h	h	h	S8
P14	**7**	a	a	a	a	a	a	a	a	**EDIT**
P15	**6**	B1	E1	F1	H1	Bp	COL2	Q1	**MHz**	**PRGM**
P16	**5**	C1	M1	REC	((( )))	I1	COL1	**EON**	**KHz**	**RANDOM**
P17	**4**	C2	N1	◁	☾	**MONO**	J1	**AG**	↻	**REC**
P18	**3**	C3	N2	▷	⇄	—	**RDS**	—	L1	🕒
P19	**2**	C4	N3		☽	**ROCK**	—	**CLASSIC**	F1	H1
P20	**1**	B1	✎				**POP**		F2	H2
P21	A1								F3	H3
P22									F4	H4





< TUNER SECTION >

1. Clock Frequency Check
   Settings : • Test point : TP2
   Method : Set to AM 1710kHz and check that the test point is 2160kHz ± 45Hz

2. AM VT Check
   Settings : • Test point : TP1
   Method : Set to AM 1710kHz and AM 530kHz and check that the test point is less than 8.5V(1710kHz) and more than 0.6V(530kHz).

3. AM IF Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location : L772.....1000kHz
   Method : The output level at 1000kHz is adjusted to maximum by L772.

4. AM Tracking Adjustment
   Settings : • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location : L981(1/3).....1000kHz
   Method : The output level at 1000kHz is adjusted to maximum by L981(1/3).

5. FM VT Check
   Settings : • Test point : TP1
   Method : Set to FM 108.0MHz and check that the test point is less than 8.0V. Set to FM 87.5MHz and check that the test point is more than 0.5V.

6. FM Tracking Check
   Settings : • Test point : TP8(Lch), TP9(Rch)
   Method : Set to FM 98.0MHz and check that the test point is less than 9.0dBμV.

7. DC Balance / Mono Distortion Adjustment
   Settings : • Test point : TP3,TP4 / TP8(Lch), TP9(Rch)
   • Adjustment location : L771
   • Input level : 60 dBμV
   Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP3 and TP4 becomes 0V ±0.04V. Next, check that the distortion is less than 1.3%.

8. μ-con OSC Adjustment
   Settings : • Test point : TP11
   • Adjustment location : L101
   Method : Insert AC plug with pressing TUNER function key. Adjust L101 so that the frequency across the test point is 58.48Hz ± 0.058Hz.

< DECK SECTION >

9. Tape Speed Adjustment
   Settings : • Test tape : TTA–100
   • Test point : TP8(Lch), TP9(Rch)
   • Adjustment location : SFR701
   Method : Play back the test tape and adjust SFR701 so that the frequency counter reads 3000Hz ± 5Hz.

10. Head Azimuth Adjustment (DECK 1, DECK 2)
    Settings : • Test tape : TTA–330
    • Test point : TP8(Lch), TP9(Rch)
    • Adjustment location : Azimuth adjustment screw
    Method : Play back the 8kHz signal of the test tape and adjust screw so that the output becomes maximum. Perform on FWD PLAY and REV PLAY mode.

11. PB Frequency Response Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–330
    • Test point : TP8(Lch), TP9(Rch)
    Method : Play back the 315Hz and 8kHz signals of the test tape and check that the output ratio of the 8kHz signal with respect to that of the 315Hz signal is within 5dB.

12. PB Sensitivity Check (DECK 1, DECK 2)
    Settings : • Test tape : TTA–200
    • Test point : TP8(Lch), TP9(Rch)
    Method : Play back the test tape and check the signal level of the test point is 110mV ± 3.0dB.

13. REC/PB Frequency Response Check
    Settings : • Test tape : TTA–602
    • Test point : TP8(Lch), TP9(Rch)
    • Input signal : 1kHz / 8kHz, -26dBV (LINE IN)
    Method : Apply 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8, TP9 becomes 8~10mV. Record and play back the 1kHz and 8kHz signals and check that the output is 0dB ± 5dB with respect to that of the 1kHz signal.

14. REC/PB Sensitivity Check
    Settings : • Test tape : TTA–602
    • Test point : TP8(Lch), TP9(Rch)
    • Input signal : 1kHz, -6dBV (LINE IN)
    Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP8,TP9 becomes 80~100mV. Record and play back the 1kHz signals and check that the output is -2.0dB ± 3.5dB.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

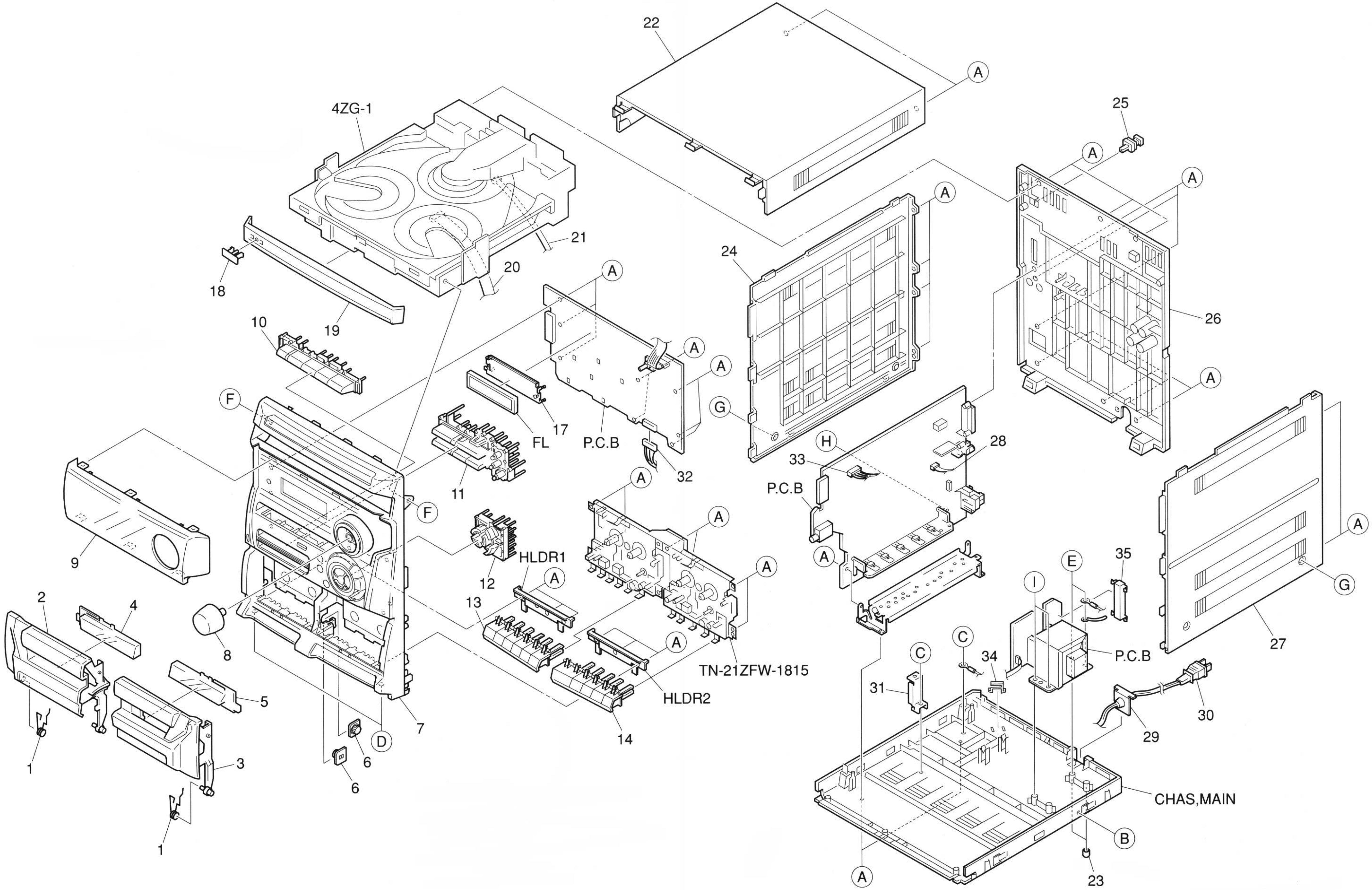
IHF Sensitivity :	Less than 10dBμV
(THD 3%)	[at 87.5MHz]
	Less than 9.0dB
	[at 98.0/108.0MHz]
S/N 50dB Quieting sensitivity :	
(Stereo)	Less than 35dB
	[at 98.0MHz]
Signal to noise ratio :	More than 68dB (mono)
	More than 66dB (stereo)
	[at 98.0MHz]
Distortion :	Less than 1.2% (mono)
	Less than 2.0% (stereo)
	[at 98.0MHz]
Stereo separation :	More than 22dB
	[at 98.0MHz]

<AM SECTION>

Sensitivity :	Less than 60dBμV
(S/N 20 dB)	[at 600kHz]
	Less than 58dBμV
	[at 1000 / 1400kHz]
Signal to noise ratio :	More than 36dB
	[at 1000kHz]
Distortion :	Less than 1.5%
	[at 1000kHz]

<DECK SECTION>

Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.35% (R.M.S)
Take-up torque :	30 ~ 60g/cm (FWD)
Back tension :	2 ~ 5g/cm
PB Output level :	2.8V ± 3dB
Distortion (REC/PB) :	Less than 2.0% (NORM)
Noise level (PB) :	Less than 40mV (NORM)
Noise level (REC/PB) :	Less than 40mV(NORM)
Erasing ratio:	More than 60dB (at 125Hz,+10VU)

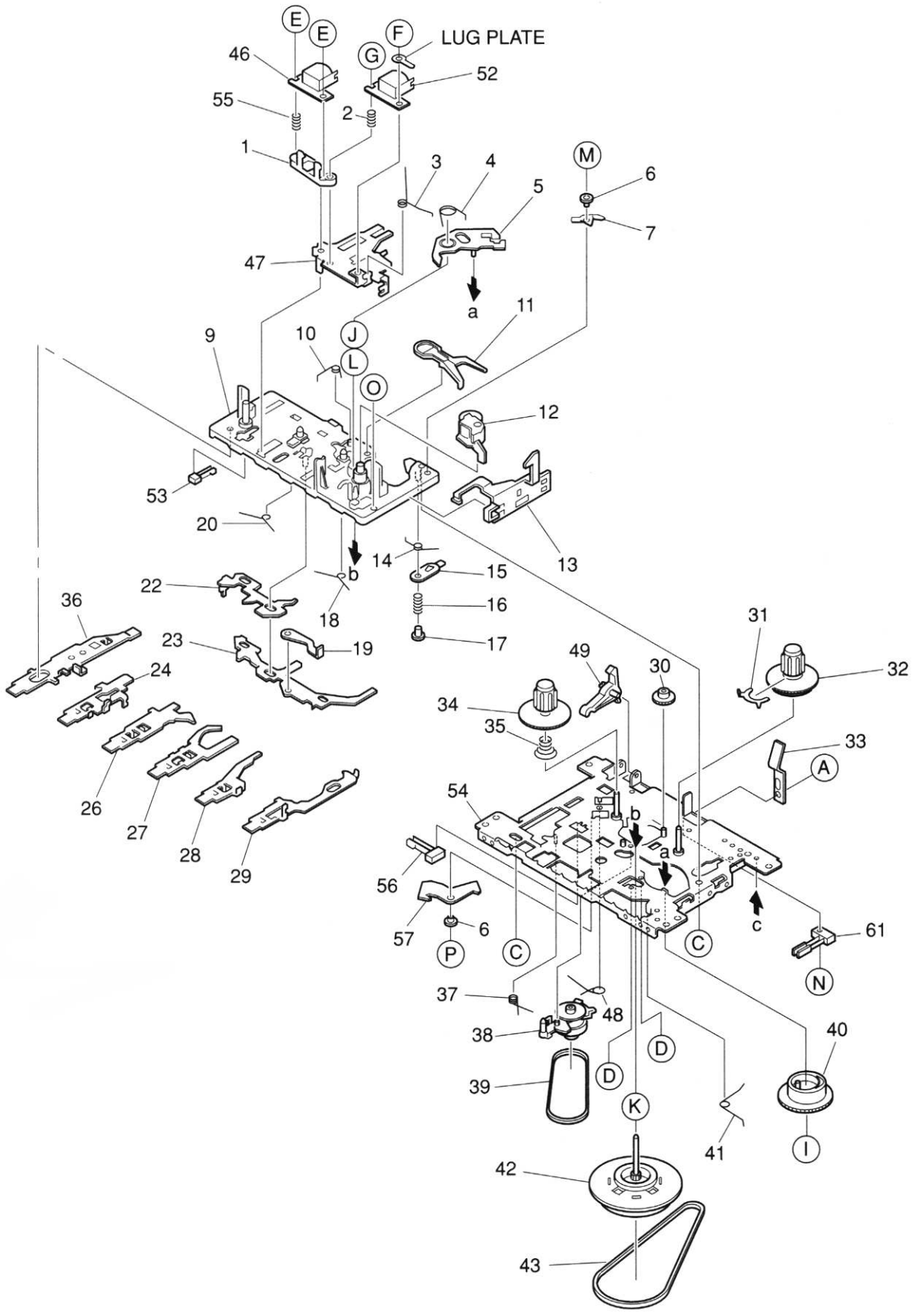

22
A
4ZG-1
25
21
20
18
19
10
24
26
17
FL
P.C.B
32
28
33
H
P.C.B
11
F
9
12
HLDR1
13
2
4
8
5
1
3
6
7
D
14
HLDR2
TN-21ZFW-1815
35
E
I
C
34
31
P.C.B
30
29
27
G
CHAS,MAIN
B
23

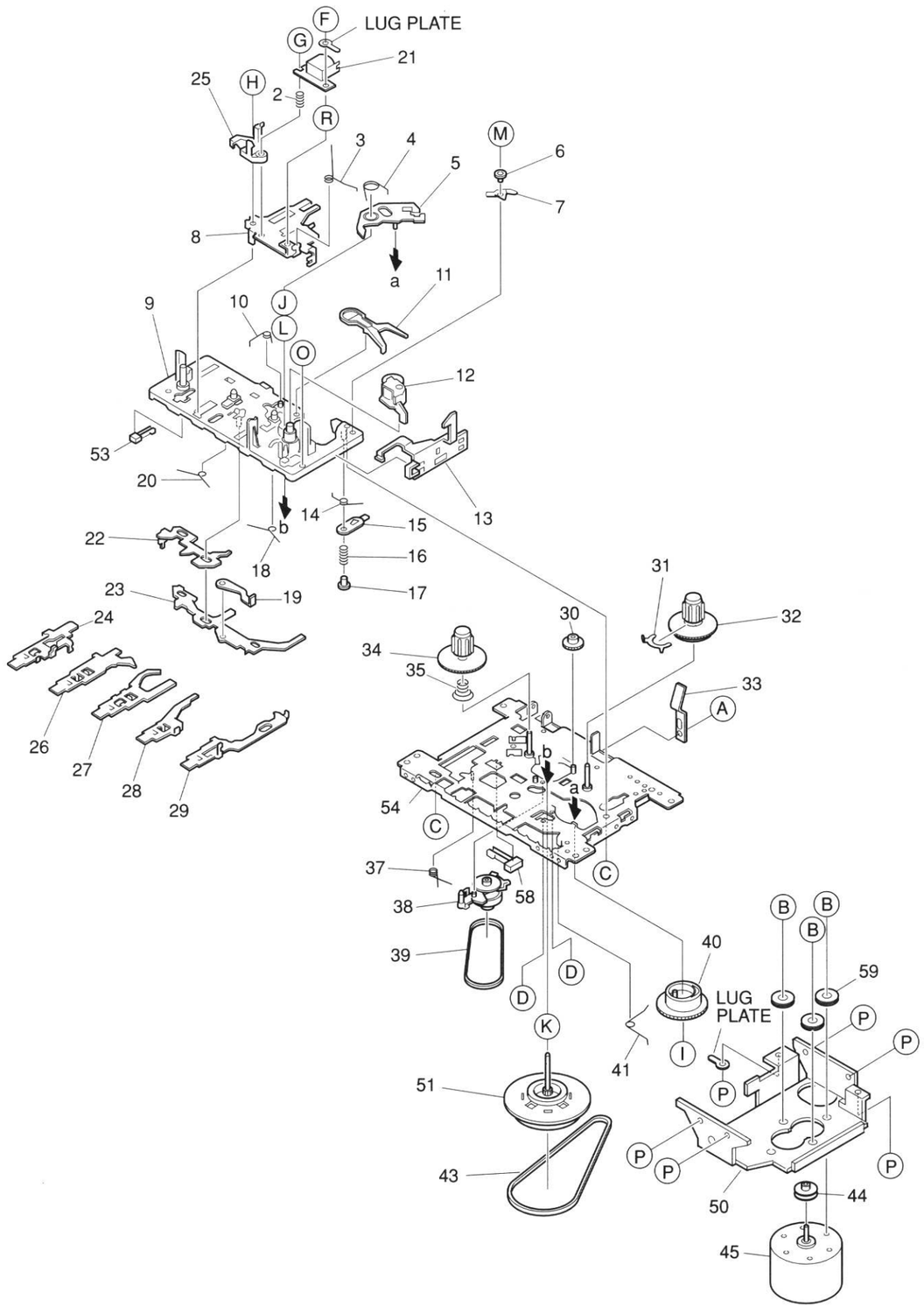
MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-NF7-218-010		SPR-T,CASS
2	8Z-NFA-003-010		BOX,CASS 1
3	8Z-NFA-004-010		BOX,CASS 2
4	8Z-NFA-008-010		WINDOW,CASS 1
5	8Z-NFA-009-010		WINDOW,CASS 2
6	86-NFZ-231-010		DMPR,70
7	8Z-NFA-001-010		CABI,FR U
8	8Z-NFA-017-010		KNOB,RTRY VOL
9	8Z-NFA-023-010		WINDOW,DISP H<111LH,HA>
9	8Z-NFA-044-010		WINDOW,DISP H119<119LH>
9	8Z-NFA-007-010		WINDOW,DISP U<111U>
9	8Z-NFA-028-010		WINDOW,DISP U115<115U>
10	8Z-NFA-010-010		KEY,FUN
11	8Z-NFA-011-010		KEY,OPE
12	8Z-NFA-012-010		KEY,CD
13	8Z-NFA-013-010		KEY,CASS 1
14	8Z-NFA-014-010		KEY,CASS 2P
17	8Z-NFA-204-010		GUIDE,FL 100-25
18	82-NE6-067-010		BADGE,AIWA 30N
19	8Z-NFA-006-010		PANEL,TRAY
20	83-NE2-618-110		F-CABEL,5P-2.5
21	88-913-221-110		FF-CABLE, 13P 1.25 220MM
22	8Z-NFA-005-010		PANEL,TOP
23	8Z-NB8-240-010		COVER, PL<EXCEPT 111U>
24	8Z-NFA-019-010		PANEL,RIGHT M V-2<111U>
24	8Z-NFA-020-010		PANEL,RIGHT S V-2<EXCEPT 111U>
25	84-ZG1-245-210		CAP,OPTICAL
26	8Z-NFA-070-010		CABI,REAR LHSTC<111LH>
26	8Z-NFA-084-110		CABI,REAR LH W/O SPC<119LH>
26	8Z-NFA-083-110		CABI,REAR HASTC<HA>
26	8Z-NFA-075-010		CABI,REAR USTM115<115U>
26	8Z-NFA-068-010		CABI,REAR USTNC<111U>
27	8Z-NFA-018-010		PANEL,LEFT V-2
28	88-906-251-110		FF-CABLE,6P 1.25
29	87-085-185-010		BUSHING, AC CORD (E)<EXCEPT 111U>
29	88-NF9-203-010		BUSHING,CORD-U<111U>
⚠ 30	87-A80-110-010		AC CORD ASSY,U SPT-2W<U>
⚠ 30	87-050-079-010		AC-CORD ASSY,E<LH>
⚠ 30	87-A80-105-010		AC-CORD ASSY,AZ<HA>
31	88-NF9-213-010		HLDR,PWB MAIN<EXCEPT 111U>
32	88-NF9-635-010		CONN ASSY,10P MECHA<EXCEPT 115U>
33	88-NF9-634-010		CONN ASSY,8P RPB<EXCEPT 115U>
34	87-NF4-221-010		HLDR,CABLE<EXCEPT 111U>
35	87-A90-165-010		SW,SL 1-2-3 SWS2301<111LH,111HA>
A	87-067-703-010		TAPPING SCREW, BVT2+3-10
B	87-721-096-410		QT2+3-10 GLD<115U>
C	87-067-584-010		TAPPING SCREW,BVT2+3-6<EXCEPT 111U>
D	87-067-758-010		BVT2+3-12 W/O SLOT<111U>
D	87-067-688-010		BVTT+3-6<EXCEPT 111U>
E	87-078-191-010		S-SCREW,IT+4-10<EXCEPT 111U>
E	87-741-172-410		UT2+4-12 W/O SLOT<111U>
F	87-721-097-410		QT2+3-12 GLD
G	87-067-641-010		UTT2+3-8(W/O SLOT)BL
H	87-NF4-224-010		S-SCREW,IT3B+3-8 CU
I	87-078-019-010		S-SCREW,IT+4-6<EXCEPT 111U>
I	87-741-172-410		UT2+4-12 W/O SLOT<111U>

TAPE MECHANISM EXPLODED VIEW 1 / 1





TAPE MECHANISM PARTS LIST 1 / 1

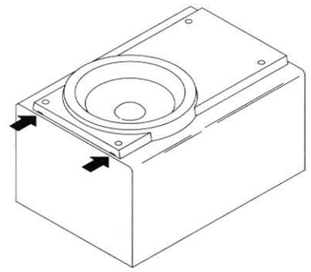
If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	S1-921-030-060		HEAD BASE
2	S1-821-030-070		AZIMUTH SPRING
3	S1-921-030-090		PANEL P SPRING
4	S1-921-260-050		GEAR PLATE SPRING
5	S1-921-265-020		GEAR PLATE ASSY
6	S1-921-140-370		P ARM COLLER
7	S1-921-140-340		P ARM
8	S1-921-030-110		HEAD PANEL
9	S1-921-143-160		BASE ASSY
10	S1-921-141-8A0		M CONTROL SPRING
11	S1-921-260-4A0		SENSING LEVER
12	S1-921-043-100		PINCH ROLLER ARM ASSY
13	S1-921-130-020		EJECT SLIDE LEVER
14	S1-921-141-3A0		P CONTROL SPRING
15	S1-921-140-550		PAUSE LEVER(E)
16	S1-921-140-120		PAUSE LEVER SPRING
17	S1-921-140-110		PAUSE STOPPER
18	S1-921-140-150		BUTTON LEVER SPRING(B)
19	S1-821-011-590		E KICK LEVER
20	S1-921-140-140		BUTTON LEVER SPRING(A)
21	S6-201-010-750		P HEAD RP-7442ES-0951
22	S1-921-140-090		SWITCH ACTUATOR
23	S1-921-140-380		PUSH BUTTON ACTUATOR
24	S1-921-140-230		PLAY BUTTON LEVER
25	S1-921-030-4A0		HEAD BASE
26	S1-921-140-240		REW BUTTON LEVER
27	S1-921-140-250		FF BUTTON LEVER
28	S1-921-140-260		STOP BUTTON LEVER
29	S1-921-140-610		PAUSE BUTTON LEVER
30	S1-821-100-700		FF GEAR
31	S1-921-050-060		SENSOR
32	S1-921-053-100		TAKE UP REEL ASSY
33	S1-829-100-010		PACK SPRING
34	S1-921-050-150		S REEL HUB
35	S1-921-050-220		BACK TENSION SPRING
36	S1-921-140-220		REC BUTTON LEVER
37	S1-921-140-170		P.S.LEVER SPRING
38	S1-921-073-080		RF CLUTCH ASSY
39	S1-921-070-030		RF BELT
40	S1-921-260-020		CAM GEAR
41	S1-921-140-160		E ACTUATOR SPRING
42	S1-921-093-210		FLYWHEEL ASSY
43	S1-921-090-400		MAIN BELT
44	S1-921-120-130		MOTOR PULLEY
45	S6-002-030-290		MOTOR EG530YD-2BH
46	S6-207-140-030		E HEAD TC-2131
47	S1-921-030-120		HEAD PANEL
48	S1-921-140-210		REC BUTTON LEVER SPRING
49	S1-821-100-690		RECORD SAFETY LEVER
50	S1-921-120-110		MOTOR BRACKET
51	S1-921-093-240		FLYWHEEL ASSY
52	S6-201-011-110		HEAD,RP7442ES-0951
53	S6-401-011-490		LEAF SW MSW-1541T
54	S1-921-015-010		CHASSIS ASSY
55	S1-821-030-080		EH SPRING
56	S6-401-011-610		LEAF SW MSW-17820MVEI
57	S1-921-020-010		REC ARM
58	S6-401-010-380		LEAF SWITCH MSW-1275
59	S1-820-130-060		MOTOR RUBBER
A	S9-P04-200-310		C TAPPING SCREW 2-3
B	S1-821-120-020		MOTOR COLLER SCREW
C	S9-B10-200-510		P TAPPING BIND SCREW M2-5
D	S9-C07-204-510		SCREW,TAPPING(CAMERA)M2-4.5
E	87-251-095-410		+-CAP SCREW M2-8
F	S9-B01-200-310		(+)BIND SCREW M2-3
G	S9-F08-200-710		AZIMUTH SCREW M2-7
H	S9-P01-200-610		SCREW,M2-6
I	S9-W02-300-100		P WASHER CUT 1.2-3.8-0.3
J	S9-W02-500-100		P WASHER CUT 1.45-3.8-0.5
K	S9-W01-400-100		P WASHER 2-3.5-0.4
L	S9-W01-130-200		P WASHER 2.1-4-0.13
M	S9-P08-203-010		PS TAPPING SCREW M2-3
N	S9-P04-200-510		C TAPPING SCREW M2-5
O	S9-P05-200-610		SCREW,TAP S M 2-6
P	S9-P04-200-410		C TAPPING SCREW M2-4

SPEAKER DISASSEMBLY INSTRUCTIONS

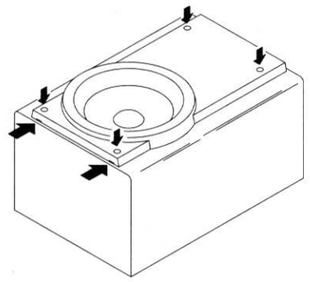
Type.1

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



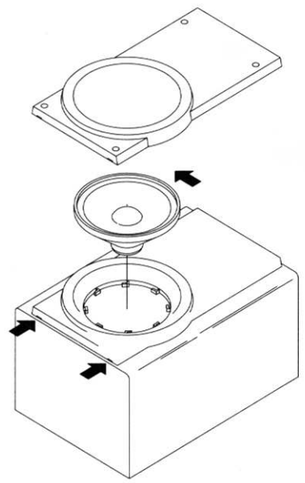
Type.2

Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hole where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units. Insert a flat-bladed screwdriver into the position indicated by the

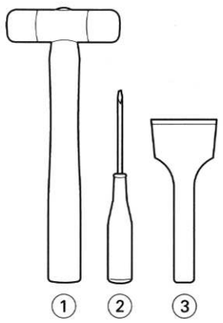


Type.3

arrows and remove the panel. Turn the speaker unit to counterclockwise direction while inserting a flat-bladed screwdriver into one of the hollows around speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turning to clockwise direction until "click" sound comes out.



Type.4



TOOLS

① Plastic head hammer
② (⊖) flat head screwdriver
③ Cut chisel

How to Remove the PANEL, FR

1. Insert the (⊖) flat head screwdriver tip into the gap between the PANEL, FR and the PANEL, SPKR. Tap the head of the (⊖) flat head screwdriver with the plastic hammer head, and create the clearance as shown in Fig-1.

2. Insert the cut chisel in the clearance, and tap the head of the cut chisel with plastic hammer as shown in Fig-2, to remove the PANEL, FR.

3. Place the speaker horizontally. Tap head of the cut chisel with plastic hammer as shown in Fig-3, and remove the PANEL, FR completely.

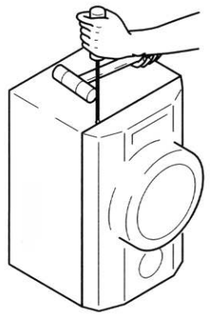


Fig-1

Fig-2

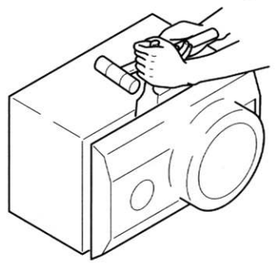


Fig-3

How to Attach the PANEL, FR

Attach the PANEL, FR to the PANEL, SPKR. Tap the four corners of the PANEL, FR with the plastic hammer to fit the PANEL, FR into the PANEL, SPKR completely.

SPEAKER PARTS LIST (SX-NA112 / SX-NA115 : YUSTL, SX-NS112 : YLSTCC, YLJSCM)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-NSL-001-010		PANEL,FR
2	8Z-NSL-003-010		GRILLE,FRAME ASSY
3	87-NS7-611-010		CORD,SPKR
4	87-NSH-612-010		SPKR,CERAMIC ASSY
5	8Z-NSL-601-110		SPKR, W 120<NA112>
5	8Z-NSL-603-010		SPKR, W 120<NA115>
5	8Z-NSL-601-010		SPKR,W 120<NS112>

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-NFA-922-010		IB,LH(ESP)A<111LH>
1	8Z-NFA-932-010		IB,LH(ESP)A<119LH>
1	8Z-NFA-912-010		IB,LH(ESP)S<HA>
1	8Z-NFA-904-010		IB,U(ESF)M -115<5U>
1	8Z-NFA-914-010		IB,U(ESF)S<1U>
2	87-006-225-010		AM LOOP ANT NC2<exp HA>
2	87-A90-030-010		ANT,LOOP AM-NC C<HA>
3	87-043-115-010		ANT,FEEDER FM
⚠ 4	87-A91-017-010		PLUG,CONVERSION JT-0476<111LH>
5	8Z-NF9-702-010		RC UNIT,ZAS02<exp 5U,119LH>
5	8Z-NF9-701-110		RC UNIT,ZAS02<5U,111LH>

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
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